ORDER NO. MD0203061C1

B12

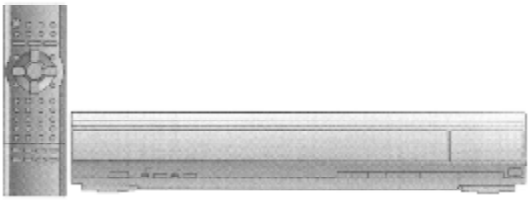
Service Manual

DVD/CD Player

DVD-CV47P

Colour

(K)... Black Type



SPECIFICATIONS

Specification

Signal system: NTSC

Operating tempurature range: +5 to +35°C (+41 to +95°F)

Operating humidity range: 5 to 90% RH (no condensation)

Discs played [8 cm (3”) or 12 cm (5”)]:

(1) DVD-Video, DVD-R (DVD-Video compatible)

(2) CD-Audio (CD-DA)

(3) Video CD

(4) CD-R/CD-RW (CD-DA, Video CD formatted discs)

(5) MP3

- Maximum number of tracks and groups recognizable: 999 tracks and 99 groups
- Compatible compression rate: 32 kbps and 320 kbps

(6) WMA

- Maximum number of tracks and groups recognizable: 999 tracks and 99 groups
- Compatible compression rate: 48 kbps or more

Video output:

- **Output level:** 1Vp-p (75 Ω)
- **Output terminal:** Pin jack (1 system)

S video output:

- **Y output level:** 1Vp-p (75 Ω)
- **C output level:** 0.286Vp-p (75 Ω)
- **Output terminal:** S terminal (1 system)

Component video output:

- **Y output level:** 1Vp-p (75 Ω)
- **PB output level:** 0.7Vp-p (75 Ω)
- **PR output level:** 0.7Vp-p (75 Ω)
- **Output terminal:** Pin jack (Y:green, PB:blue, PR:red)
- **Number of terminal:** 1 system

Audio output:

- **Output level:** 2Vrms (1kHz, 0dB)
- **Output terminal:** Pin jack
- **Number of terminal:**
  - **2ch:** 1 system
  - **Subwoofer output (0.1ch):** 1 system

Audio performance:

(1) **Frequency response:**

- **DVD (linear audio):** 4Hz-22kHz (48 kHz sampling) 4Hz-44kHz (96 kHz sampling)
- **CD audio:** 4Hz-20kHz (EIAJ)

(2) **S/N ratio:**

- **CD audio:** 115dB (EIAJ)

(3) **Dynamic range:**

- **DVD (linear audio):** 102dB
- **CD audio:** 98dB (EIAJ)

(4) Total harmonic distortion:

■ CD audio: 0.0025% (EIAJ)

Digital audio output:

Optical digital output: Optical terminal

Pickup:

Wave length: 665nm

Laser power: CLASS IIa/CLASS I

Power supply: AC 120 V, 60 Hz

Power consumption: 12 W

Dimensions: 430 (W) x 406.5 (D) x 75.8 (H) mm
[17" (W) x 16" (D) x 3" (H)]
(excluding protrusions)

Mass: 4.5kg (9.9 lb.)

Power consumption in standby mode: approx. 2.5 W

Note:

1. Specifications are subject to change without notice.
Mass and dimensions are approximate.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

1. Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitors C1011 & C1012 through a 10 Ω, 5W resistor to ground.
DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.
After repairs are completed, restore power gradually using a variac, to avoid overcurrent.
Current consumption at AC 120V, 60Hz in NO SIGNAL mode should be ~190 mA .

2. Safety Precautions

2.1. General Guidelines

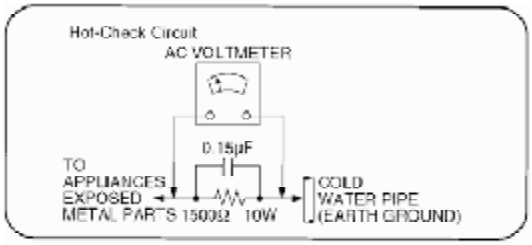
1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.

3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

2.1.1. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1M Ω and 5.2M Ω .
   When the exposed metal does not have a return path to the chassis, the reading must be ~.

Figure 1



2.1.2. Leakage Current Hot Check / (See Figure 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5k Ω , 10 watts resistor, in parallel with a 0.15 〃 F capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 phms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/

2 milliamp. In case a measurement is out of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

3. Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. **Immediately before handling any semiconductor component or semiconductor-equiped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**
2. **After removing an electrical assembly equiped with ES devices, place the assembly on a conductive surface such as aluminium foil, to prevent electrostatic charge build up or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
4. **Use only an anti-static solder remover device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge to damage ES devices.**
5. **Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
6. **Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminium foil or comparable conductive material).**
7. **Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be**

installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. **Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).**

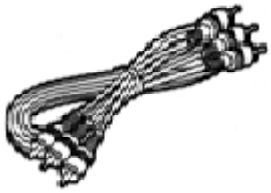
IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

4. Accessories

AC Power Supply Cord

Audio/Video Cable



Remote Control

5. Precaution of Laser Diode

CAUTION :

This unit utilizes a class 1 laser.
Invisible laser radiation is emitted from the optical pickup lens.
When the unit is turned on :

1. **Do not look directly into the pick up lens.**

2. Do not use optical instruments to look at the pick up lens.
3. Do not adjust the preset variable resistor on the pickup lens.
4. Do not disassemble the optical pick up unit.
5. If the optical pick up is replaced, use the manufacturer's specified replacement pick up only.
6. Use of control or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION!

THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN TH
SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

6. Handling Precaution for Traverse Deck

The laser diode in the optical pickup may break down due to potential difference caused by static electricity of clothes or human body.
So be careful of electrostatic break down during repair of the optical pickup.

6.1. Handling of optical pickup

1. Do not subject the optical pickup to static electricity as it is extremely sensitive to electrical shock.
2. Cut the optical unit FPC at the point as shown when replacing a new optical unit. When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

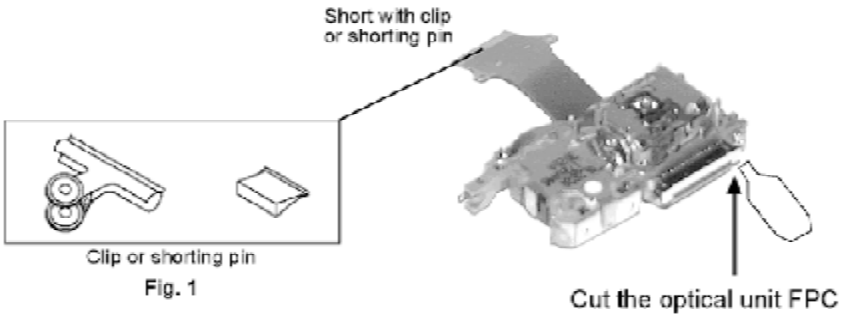


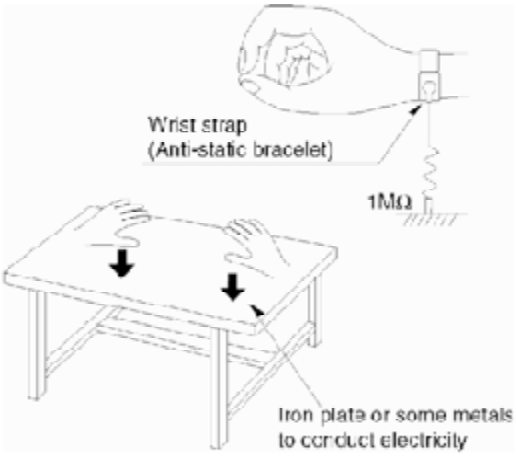
Fig. 1

6.2. Grounding for electrostatic breakdown prevention

1. **Human body grounding**
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. **Work table grounding**
   Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution :

The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



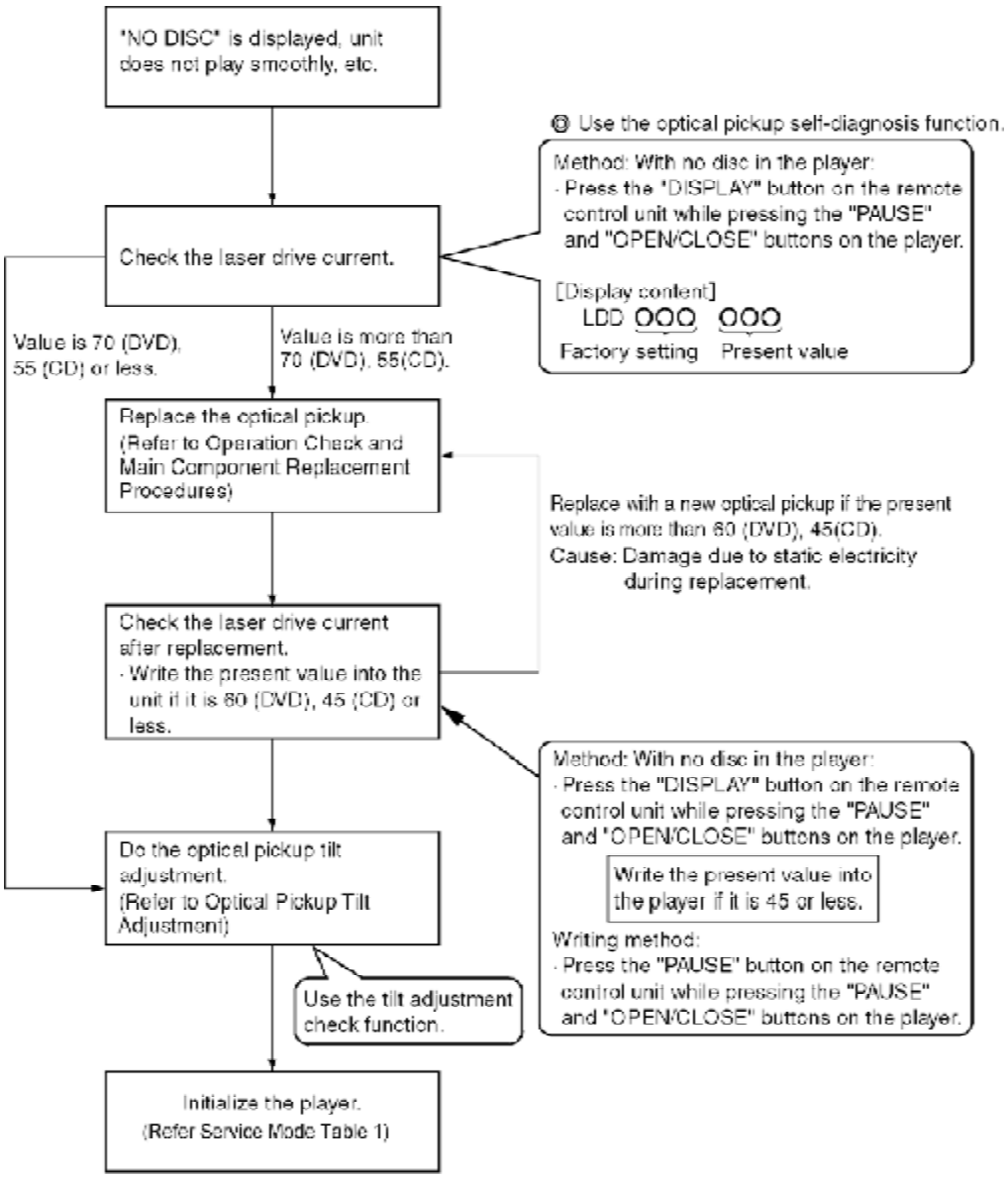
7. Optical Pickup Self-Diagnosis and Replacement Procedure

The optical pickup self-diagnosis function and tilt adjustment check function have been newly added to this player. When repairing, use the following procedure for effective Self-diagnosis and tilt adjustment.
Be sure to use the self-diagnosis function before replacing the optical pickup when "NO DISC" is displayed. As a guideline, you should replace the optical pickup when the value of the laser

drive current is more than 55.

Note

Press the power button to turn on the power and check the value before the unit warms up (within three minutes).


"NO DISC" is displayed, unit does not play smoothly, etc.
Check the laser drive current.
Value is 70 (DVD), 55 (CD) or less.
Value is more than 70 (DVD), 55(CD).
Replace the optical pickup. (Refer to Operation Check and Main Component Replacement Procedures)
Check the laser drive current after replacement.
· Write the present value into the unit if it is 60 (DVD), 45 (CD) or less.
Do the optical pickup tilt adjustment. (Refer to Optical Pickup Tilt Adjustment)
Use the tilt adjustment check function.
Initialize the player. (Refer Service Mode Table 1)
Use the optical pickup self-diagnosis function.
Method: With no disc in the player:
· Press the "DISPLAY" button on the remote control unit while pressing the "PAUSE" and "OPEN/CLOSE" buttons on the player.
[Display content]
LDD OOO OOO
Factory setting Present value
Replace with a new optical pickup if the present value is more than 60 (DVD), 45(CD).
Cause: Damage due to static electricity during replacement.
Method: With no disc in the player:
· Press the "DISPLAY" button on the remote control unit while pressing the "PAUSE" and "OPEN/CLOSE" buttons on the player.
Write the present value into the player if it is 45 or less.
Writing method:
· Press the "PAUSE" button on the remote control unit while pressing the "PAUSE" and "OPEN/CLOSE" buttons on the player.

8. Self-Diagnosis Function and Service Mode

8.1. New servicing method for DVD player (5th generation models)

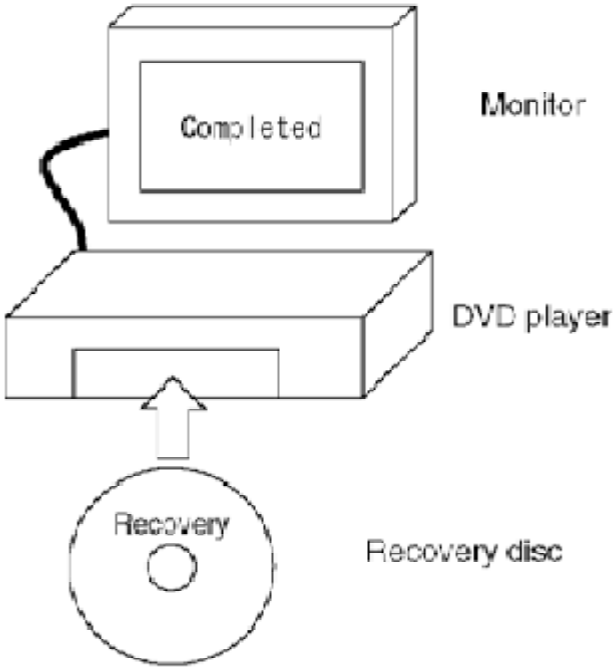
With the 5th generation models new self-diagnosis function and new servicing method described below are additionally available.

8.1.1. Firmware updating and recovery with disc

- Recovery

- Firmware updating

Simply run the recovery disc. Then both of the above operations are automatically performed.
Commercially available CD-R can now perform updating and recovery process, making it easier to update the version.
Recovery process: Optimization of player after replacement of FROM, EEPROM and modular P.C.B.
Version updating: Firmware updating for improved operability and performance.



8.1.2. New self-diagnosis function

- Cumulative operation time display function (Spindle motor and DVD /CD laser)
- Servo process display function
- ADSC internal RAM display function
- Other: Increased number of last errors storage
1 event → 20 events
Utilization of the above functions,in combination with servicing procedures, is expected to contribute to higher efficiency of fault diagnosis.

[Purpose]
Operation time display function: For faultfinding of spindle motor or laser that has limited service life
Servo process: For fault diagnosis of player startup malfunction
ADSC internal RAM display function: For faulty part identification in servo system using the

learned values

8.2. How to use recovery disc

8.2.1. Performing recovery

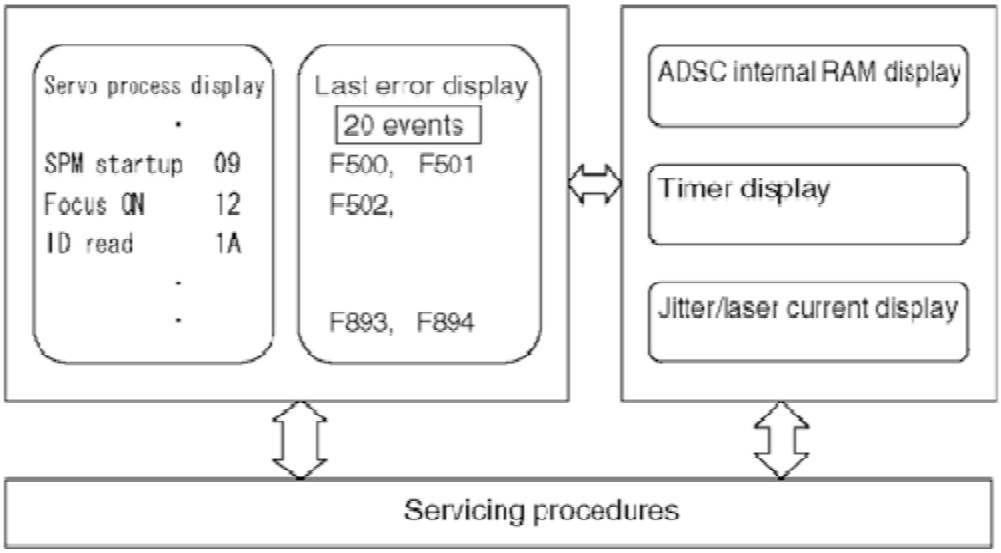
1. Load the recovery disc RFKZD5TR006 on to the player and run it.
2. Recovery is performed automatically. When it is finished, a message appears on the screen.
3. Press “Disc Exchange” button.
4. Remove the recovery disc.
5. Turn off the power.

8.2.2. Updating firmware

1. Load the recovery disc RFKZD5TR006 SPC on to the player and run it.
2. Firmware version of the player is automatically checked. Approriate message appears whenever necessary.
3. Using remote controller’s cursor key, select whether version updating is to be done or not. (selection of Yes/No)
4. a. If Yes is selected, version updating is performed.
   b. If No is selected, only recovery is performed.
5. a. When updating is finished, remove the disc according to the message appearing on the screen.
   b. Remove the disc according to the message appearing on the screen. (Press “Disc Exchange” button to eject the tray).
6. Turn off the power.

8.3. Fault diagnosis using new self-diagnosis function

The 5th generation DVD players have the additional new service modes as described above to further reinforce the diagnosis function.
These new functions are unable to bring sufficient results when they are used alone.
Effective fault diagnosis can be expected when multiple diagnostic methods are properly combined in accordance with the servicing procedures depending on specific fault status.



***New servicing procedures are now under study to match with the newly developed self-diagnosis functions introduced here.**
Details of the new servicing procedures will be informed from time to time.

1. Cumulative operation time display function

For spindle motor and DVD/CD laser, the cumulative operation time is displayed.

When servicing, check the timer display and use it as information for fault diagnosis.

At the time of repair and replacement of these components, make sure to check the operation time and reset the timer after replacement.

Operation time of the replacement parts (spindle motor and laser) is the valuable information as actual data for future product quality.

Please save the records and supply information to us.

2. Servo process display function

This additional function is intended to improve efficiency of fault diagnosis, especially for the player's startup failure, in combination with the learned value data of ADSC internal RAM.

3. ADSC internal RAM display function

The function is to display the internal RAM data of ADSC servo processor.

The RAM data are the learned values of drive servo, memorizing those concerning focus and tracking, as well as data slice and equalizer.

*** This function is also a newly developed service mode. Its full utilization is still under study.**

4. Others

- Increased number of last errors stored.
1 event → 20 events
Focus drive value display function

8.4. Overview of each function

8.4.1. Cumulative operation time display

1. Operation/display

DVD/CD laser operation time
Unit: 10 hours in decimal notation

Spindle motor operation time
Unit: 10 hours in decimal notation

Note: You may have to press the "FL select" button on the remote control to view the remaining text when the text is too long to display on the FL at one time.
Key operations are as follow:
Laser operation time ..... In STOP mode, main unit PAUSE+FWD -SKIP+ remote controller [5]
Spindle motor operation time ..... In STOP mode, main unit PAUSE+FWD-SKIP+ remote controller [6]
To reset the timer, perform the following while displaying the time with above key operation.
Laser operation time ..... In STOP mode, main unit STOP+FWD-SKIP+ remote controller [5]
Spindle motor operation time ..... In STOP mode, main unit STOP+ FWD-SKIP+ remote controller [6]

2. How to utilize
Reference information in fault diagnosis of laser or spindle motor system.
Review of fault point in repeated repair

8.4.2. Servo process display

1. Operation/display

While the player is in STOP mode, perform the specified key operation to display the servo process number on FL.
When the display does not change from the error indication, press Open/Close key to show the servo process number.
Key operation: In STOP mode, main unit PAUSE+FWD- SKIP+ remote controller [7].

Number to the left ..... Process number when halted
Number to the right ..... Process number in progress

8.4.3. ADSC internal RAM display function

1. Operation/display
Key operation: Main unit PAUSE+OPEN + remote controller [RETURN]. Operate the remote controller [CLEAR] key to update internal RAM address and display 11 learned values.
Table 1 shows the descriptions of the display.

2. How to utilize
At present, learned values of ADSC internal RAM are expected to be useful for the following faulty part identification.
Use how learned value changes from initial value to find whether faulty part exists before or after ADSC in the focus/tracking servo system.
[Focus system]
When focus gain remains at initial value and tracking gain changes, fault exists before ADSC input.
When focus gain changes and tracking gain remains at initial value, fault exists after ADSC output.
{Tracking system]
When focus gain remains at initial value and tracking gain changes, fault exists before ADSC output.
When focus gain changes and tracking gain remains at initial value, fault exists after ADSC input.

Table 1 ADSC internal RAM learned value

Address	Memory data	Data range	Stan va
4B4	Focus gain learned value except for DVD DL (L1 layer)	0040h~0800h	200h
4BC	Focus gain learned value of DVD DL (L1 layer)	0040h~0800h	200h
4B6	Focus balance learned value except for DVD DL (L1 layer)	B000h~5000h	0000h
4BE	Focus balance learned value of DVD DL (L1 layer)	B000h~5000h	0000h
4B5	Tracking gain learned value except for DVD DL (L1 layer)	0040h~0800h	200h
4BD	Tracking gain learned value of DVD DL (L1 layer)	0040h~0800h	200h
TB0	Tracking balance learned value of DVD SL and DL (L0)	0060h~FFA0h	0000h
	Tracking balance learned value of CD and VCD	B000h~5000h	0000h
TB1	Tracking balance learned value of DVD DL (L1 layer)	FFA0~0060h	0000h
DBD	DSL offset learned value of DVD	9000h~F000h	
DBC	DSL offset learned value of CD and VCD	9000h~F000h	
FC0	Equalizer FC value except for DVD DL (L1 leyer)	0000h~0004h	
BT0	Equalizer BOOST value except for DVD DL (L1 layer)	0000h~0004h	
FC1	Equalizer FC value of DVD DL (L1 leyer)	0000h~0004h	
BT1	Equalizer BOOST value of DVD DL (L1 layer)	0000h~0004h	

Notes:

1. **Learned values of focus balance and tracking balance are the coded binary data.**
2. **DSL offset learned value is effective only in upper 2 digits. (Lower 2 digits, normally 06, are ignored.)**

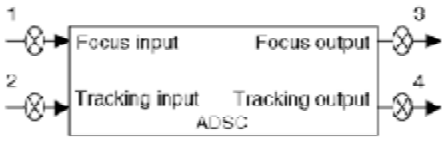
Picking up servo learned value (Determined)

1. **Focus (primary)/tracking balance learning ... When leading in focus**
2. **Focus/tracking gain and equalizer ... When leading in tracking**
3. **Focus balance (secondary) ... When leading in tracking**

[Note]
When fault exists somewhere after tracking servo, the disc type is switched by retry to make learned value different from the one in normal startup.

Initial learned value: Gain = 0200
Balance = 0000
DSL = C406/CC06 (Differs depending on P.C.B.)
Equalizer = 0000

Equalizer value is entered when RF signal is sent out.
When focus/tracking servo system circuit is faulty, the gain learned value changes from initial value as follows.



Disconnection point →	1	2	3	4
Focus gain	0200	00A0	00A0	0200
Tracking gain	0400	0200	0200	0400

Examples of ADSC internal RAM learned value display

8.5. Service Mode Table 1

The service modes can be activated by pressing various button combination on the player and the remote control unit.

Player buttons	Remote control unit buttons	Application	Not
PAUSE + OPEN/ CLOSE	0	Displaying the UHF display F _ _ _	Refer to sec Self-Diagno Function (U Display)
	5	Jitter check, tilt adjustment *Display show J_xxx_yyy_zz “yyy” and “zz” shown to the right have nothing to do with the jitter value. “yyy” is the error counter, while “zz” is the focusdrive value. Refer to Section 10.4. for Optical Pickup Tilt Adjustment Procedure.	Refer to Sec 13.4. Optica Tilt Adjustm
	6	Checking the region numbers and broadcast system	
	7	Checking the program version	Check the I FLASH ROM program.
	9	Lighting Confirmation Function of Display Tube	
	DISPLAY	Checking the laser drive current	Refer to Sec Optical Pick Replacemer Procedure
	PAUSE	Writing the laser drive current value after replacing the optical pickup (do not use for anything other than optical pickup replacement)	
PAUSE SKIP/ SEARCH<< OPEN/CLOSE		Initializing the DVD player (restoring factory preset settings) *Use when replacing a microprocessor, microprocessor peripheral, or P.C.B.	

8.6. DVD Self-Diagnosis Function-Error Code

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3	I
	U, H error					
U11	Focus error					
H01	Tray loading error					
H02	Spindle servo error	(Spindle servo, DSC SP motor, CLV servo error)				
H03	Traverse servo error					
H04	Tracking servo error					
H05	Seek error					
H06	Power error	Cannot switch off the power because of the panel and system computer communication error				
	DSC related					
F500	DSC error	DSC stops in the occurence of servo error (startup, focus error, etc)	OPU	ADSC	FEP	s c
F501	DSC not Ready	DSC-system computer communication error (Communication failure caused by idling of DSC)	ADSC	CPU		
F502	DSC Time out error	Similar disposal as F500	OPU	ADSC	FEP	s c
F503	DSC communication Failure	Communication error (result error occured although communication command was sent)	ADSC	FEP	EEPROM	
F505	DSC Attention error	Similar disposal as F500	OPU	ADSC	FEP	s c
F506	Invalid media	Disc is flipped over, TOC unreadable, incompatible disc	DISC	FEP	ADSC	C
	ODC related					
F600	Access failure to management information caused by demodulation error	Operation stopped because navigation data is not accessible caused by the demodulation defect	ODC	FEP	ADSC	
F601	Indeterminate sector ID requested	Operation stopped caused by the request to access abnormal ID data	ODC	FEP	ADSC	

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3	I
F602	Access failure to LEAD IN caused by demodulation error	LEAD IN data unreadable				
F603	Access failure to KEYDET caused by demodulation error	Access failure to CSS data of disc				
F610	ODC abnormality	No permission for command execution	ODC			
F611	6626 QCODE don’t read error	Access failure to seek address in CD series	ODC			
F612	No CRC OK for a specific time	Access failure to ID data in DVD series	ODC			
F630	No reply to KEY DET enquiry	(for internal use only)				
F631	CPPM KEY DET is not available till the FILE terminal	(CCPM file system in unreadable caused by scratches)	DISC	CPPM		
F632	CPPM KEY DET is not available	Been revoked or falsified	DISC	EEPROM	CPPM	
	Disc Code					
F103	Illegal highlight Position	Big possibility of disc specification violation during highlight display	DISC			
	HIC Error					
F4FF	Force initializing failure (Time out)		EEPROM	CPU	FEP	A
	Micro computer error					
F700	MBX overflow	When replying message to disc manager				
F701	Message command does not end	Next massage is sent bafore replying to disc manager				
F702	Message command changes	Message is changed before it is sent as a reply to disc manager				
F880	Task number is not a appropriate	Message coming from a non-existing task				

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3	I
F890	Sending message when message is being sent to AV task	Sending message to AV task				
F891	Message couldn't be sent to AV task	Begin sending message to AV task				
F893	FROM falsification		FROM	CPU		
F894	EEPROM abnormality		EEPROM	Serial communication on lone		
F8A0	Message command is not appropriate	Begin sending messgae to AV task				

8.7. Last Error Code saved during NO PLAY

Error Code	Error Content	System computer	Setting task	System computer i error code
F0BF	6) Cannot playback because physical layer is not recognizable	PCND_NOPLAY PHYSICAL 0x50	DriveManager	0xDOBF
F0C0	8) DVD: Cannot playback because it is not DVD Video/Audio/ VR	PCND_NOPLAY VIDEO 0x70	DiscManager	0xDOC0
F0C1	9) DVD Prohibited by the restricted region code	PCND_NOPLAY RCD 0x80	DiscManager	0xDOC1
F0C2	A) DVD: PAL restricted playback	PCND_NOPLAY PAL 0x90	DiscManager	0xDOC2
F0C3	B) DVD: Parental lock setting prohibits the playback of the entire title	PCND_NOPLAY PTL 0xA0	DiscManager	0xDOC3
F0C4	C) VCD: Prohibited bacause it is in PHOTO CD format	PCND_NOPLAY PHOTO CD 0xB0	DiscManager	0xDOC4
F0C5	VCD/CD: Prohibited because it is CDROM without CD-DA	PCND_NOPLAY CDROM 0xC0	DiscManager	0xDOC5

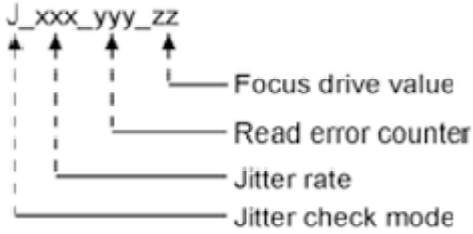
8.8. Self-Diagnosis Function and Service Mode

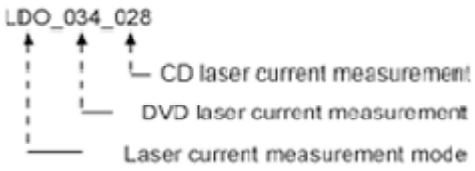
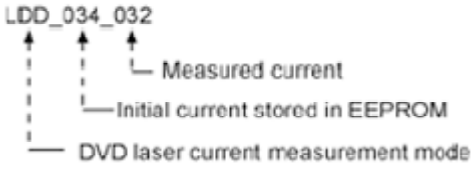
Improving the self-diagnosis function
The self-diagnosis function in our DVD player currently in use is improved as follows:

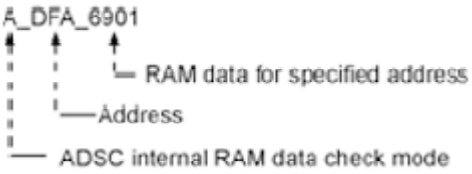
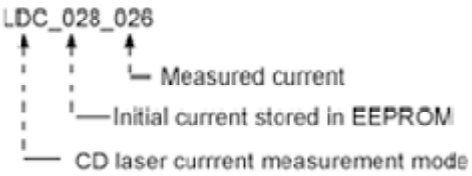
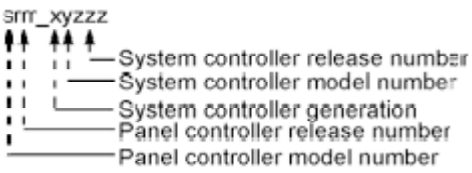
Our DVD player currently in use	Our new DVD	
UHF error display The latest error storage function n=1	UHF error display The latest error storage n=20	The storage capacity is increased.
Jitter/read error display	Jitter/read error display Focus drive value display	The focus drive current value can be displayed.
Laser drive current display For DVD	Laser drive current display For DVD/CD	
	ADSC internal RAM cata display	The servo learning value stored in the RAM data inside the ADSC (servo controller) IC is displayed.
	Servo process display	Mainly in the initial starting operation period of the player, a number is allotted to the servo process of each step, and the process of the starting operation can be displayed.
	Total operation time cisplay SP motor Laser (DVD/CD)	The operation times of SP motor and the laser (both for the DVD and CD) can be displayed).

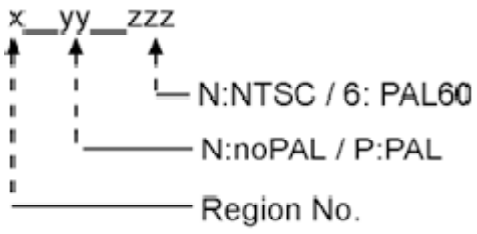
8.9. Service Mode Table 2

Pressing various button combinations on the player and remote control unit can activate the service modes.

Item	Player mode and button combination	Function	Display	Car r
Jitter check	**In PLAY mode, press PAUSE and OPEN buttons on the player, and “5” button on the remote control unit.**	**Jitter check. Jitter check is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be read out, the counter advances by one increment. When the failure is caused by mirror error, it may be corrected when retried to enable successful reading. In this case, the counter advances by one. When the error persists even after retry, the counter may jump by two or more.**	 **Jitter rate is shown in decimal notaiton to one place of decimal. Focus drive value is shown in hexadecimal notation.**	**Pre ST(OP but**

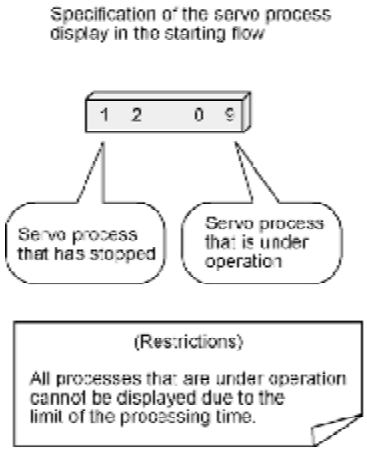
Item	Player mode and button combination	Function	Display	Car r
Error code check	In ** mode, press PAUSE and OPEN buttons on the player, and “0” button on the remote control unit. * With pointing of cursor up and down on display, the panel controller switches serial number of history and sends out the command accordingly.	Error code check. The latest error code stored in EEPROM is displayed.	Error code (play_err) is expressed in the following convention. Error code =0 xDAXX is expressed: → nn UXX Error code= 0 x BDXX is expressed: → nn HXX Error code= 0 x DXXX is expressed: → nn FXXX Error code= 0 x 0000 is expressed: → nn F--- * “nn” denotes the serial number of history.	Car aut 5 s late
Initial setting of laser drive current	In STOP mode, press PAUSE and OPEN buttons on the player, and PAUSE button on the remote control unit.	Initial setting of laser drive current initial current value for each of DVD laser and CD laser is separately saved in EEPROM.	 The value denotes the current in decimal notation. The above example shows the initial current is 34mA and 28mA for DVD laser and CD laser respectively when the laser is switched on.	Car aut 5 s late
DVD laser drive current measurement	In STOP mode, press PAUSE and OPEN buttons on player, and DISPLAY button on the remote control unit.	DVD laser drive current measurement -DVD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, DVD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)	 The value denotes the current in decimal notation. The above example shows the initial current is 34mA and the measured value is 32mA.	Car aut 5 s late

Item	Player mode and button combination	Function	Display	Car r
ADSC internal RAM data check	In ** mode, press PAUSE and OPEN buttons on the player, and RETURN button on the remote control unit.	ADSC internal RAM data check -ADSC internal RAM data is read out and displayed. / Change the address with CLEAR key operation to show the data for 11 addresses.	 The value is shown in hexadecimal notation. The above example shows the data in ADSC address DFah is 6901h.	Pre ST(OP but
Servo process display	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and “7” button on the remote control unit.	Servo process displayed. The servo process from STOP to ACCESS is displayed.	-	Tur sec pov
CD laser drive current measurement	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and DISPLAY button on the remote control unit.	CD laser drive current measurement. CD laser drive current measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, CD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)	 The value denotes the current in decimal notation. The above example shows the initial current is 28mA and the measured value is 26mA.	-
Version display	In STOP mode, press PAUSE and OPEN buttons on the player, and “7” button on the remote control unit.	Version display.		Car aut 5 s late

Item	Player mode and button combination	Function	Display	Car r
Lighting of display tube	In ** mode, press PAUSE and OPEN buttons on the player, and “9” button on the remote control unit.	Lighting of display tube	-	Pre ST OP but
Dealer’s lock	In STOP mode, press STOP button on the player, and POWER button on the remote control unit.	Dealer’s lock. The lock is switched ON or OFF. When dealer’s lock is ON, it prohibits switching off of the secondary power and tray opening. When the lock is switched, its ON/OFF status is stored in EEPROM.	-“LOCKED” sign appears when dealer’s lock is swiched on, or when secondary power key or tray opening key is pressed while the lock is on. -“UNLOCKED” sign appears when dealer’s lock is switched off.	Rep sar ope
Initialization	In STOP mode, press PAUSE, BWD-SKIP and OPEN buttons on the player for 3 seconds or longer.	Initialization. User settings are cancelled and player is initailized to factory setting.	“INITIALIZED”	
Region display	In STOP mode, press PAUSE and OPEN buttons on the player, and “6” button on the remote control unit.	Region display		Car aut 5 s late

Item	Player mode and button combination	Function	Display	Canc me
Timer 1 check	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and “5” button on the remote control unit.	Timer 1 check. Laser operation timer. Operation time is measured separately for DVD laser and CD laser.	T1_1234_5678. Shown to the left is DVD laser time, and to the right CD laser time. Time is shown in 4 digits of decimal notation in a unit of 10 hours. “0000” will follow “9999”’. (You may have to press the “FL select” button on the remote control to view the remaining text when the text is too long to display on the FL at one time).	Cancell automa second
Timer 1 reset	While displaying Timer 1 data, press STOP and FWD-SKIP buttons on the player, and “5” button on the remote control unit.	Timer 1 reset. Laser operation timer. Operation time of both DVD laser and CD laser is reset all at once.	T1_0000_0000. (You may have to press the “FL select” button on the remote control to view the remaining text when the text is too long to display on the FL at one time).	Cancell automa second
Timer 2 check	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and “6” button on the remote control unit.	Timer 2 check. Spindle motor operation timer.	T2_1234. Time is shown in 4 digits of decimal notation in a unit of 10 hours. “0000” will follow “9999”.	Cancell automa second
Timer 2 reset	While displaying Timer 2 data, press STOP and FWD-SKIP buttons on the player and “6” button on the remote control unit.	Timer 2 reset. Spindle motor operation timer.	T2_0000	Cancell automa second

8.10. Servo Process Flow


Specification of the servo process display in the starting flow
1 2 0 9
Servo process that has stopped
Servo process that is under operation
(Restrictions)
All processes that are under operation cannot be displayed due to the limit of the processing time.

Starting flow	Range of the servo process numbers	Processing items	
		Number	Contents of each process
Start			
Initial setting Tray control	00	00	Each initial setting
TRV initial movement	01	01	TRV initial movement
Disc detection	02~08	02	Initial setting in FE system
		05	Detecting LD ON HALF
		08	Detecting CD LD ON
Disc type distinction	02~08	02	Initial setting in FE system
Focus servo	10~13	12	Focus ON
		13	FBAL adjustment
Tracking servo	14~15	15	Tracking ON
Gain learning	17	17	Gain adjustment in ADSC focus system
ID read	18~1A	19	DBAL/equalizer adjustment
		1A	ID read

8.11. Servo Process Display Mode

In starting operation of the player, a number is alloted to each servo process so that the operation of each step can be seen. The relation between the process and the displayed number are as follows:

Number allotment to the servo process

Process classification	Each processing item	Description	Proces numbe
Initial start process	Initial start	The process starts after the tray is loaded. (The state is changed to “READY” or “PREPARE”.)	0~40
	Secondary learning	Servos for the DVD-DL 1st layer and the CD-DA double speed are learned in this step.	50~7F
Restart process	Restart	When a user operates in the “READY” state, each servo is turned on.	80~9F
Seek process	Seek	The optical pickup is moved to the disc destination in this process.	A0~BF
Repair process	Recover		
	(Error check)	An error is searched in the PLAY/SEEK state.	C1~C3
	(Attention)	An error is recovered following the attention error interrupt from the S-ODC.	C4~C6
	(Q code read)	If any Q code in improperly read, reset and retry.	C7~C9
Stop process	Stop	A servo is controlled in response to the user’s operation to stop the disc completely.	F0~FF

8.12. ADSC Internal RAM Data Display

The servo learning value in the RAM data inside the servo processor ADSC is displayed.
The value is useful for the servo operation/disc quality judge including the OPU.
The concrete contents are shown below:

Address	Contents of display
4B4	Focus gain learning value for DVD-S, DVD-D(L0), CD, and VCD
4BC	Focus gain learning value for DVD-D(L1)
4B6	Focus balance learning value for DVD-S, DVD-D(L0), CD, and VCD
4BE	Focus balance learning value for DVD-D(L1)
4B5	Tracking gain value for DVD-S, DVD-D(L0), CD, and VCD
4BD	Tracking gain value for DVD-D(L1)
TB0	Tracking balance value for DVD-S, DVD-D(L0), CD, VCD
TB1	Tracking balance value for DVD-D(L1)
DBD	DSL offset learning value for DVD-S and DVD-D
DBC	DSL offset learning value for CD and VCD
FC0	Equalizer FC value for DVD-S, DVD-D(L0), CD, and VCD
BT0	Equalizer BOOST value for DVD-S, DVD-D(L0), CD and VCD
FC1	Equalizer FC value for DVD-D(L1)
BT1	Equalizer BOOST value for DVD-D(L1)

8.13. Sales demostration lock function

This function prevents discs from being lost when the unit is used for sales demostrations by disabling the disc eject function.
“LOCKED” is displayed on the unit, and ordinary operation is disabled.

8.13.1. Setting

The sales demostration lock is set by simultaneously pressing STOP button on the player and

POWER button on the remote control unit.

8.13.2. Cancellation

The lock can be cancelled by the same procedure as used in setting. (“UNLOCKED” is displayed on cancellation. Disconnecting the power cable from power outlet does not cancel the lock.)

8.14. Service Precautions

8.14.1. Recovery after the DVD player is repaired

When an FROM or an EEPROM in and on the module P.C.B. has replaced, carry out the recovery disc processing to optimize the drive.
Playback the disc above to process the recovery automatically.
Recovery disc (Product number: RFKZD5TR006)
Notes:
This unit requiress no initialization process carried out after the traditional DVD players were repaired.
When the recovery measures are taken, the customer setting will return to the factory setting as same as the procedure described in item of “Initialization” in 8.6 is carried out. Write down the contents of the setting before recovery processing, and reset the player.

8.14.2. Firmware version-up of the DVD player

The firmware of the DVD player may be renewed to improved the quality including operationability and playerbility to the substandard disc processing to optimize the drive.
The version-up disc has also a recovery function so that you don’t need use the recovery disc again.
Note:
If the AC power supply is shut out during version-up due to a power failure, the version-up is improperly carried out.
In such case, replace the FROM and carry out the version-up again.
The product number of the version-up disc will be noticed when it is supplied.

8.15. Handling After Completing Repairs

Use the following procedure after completing repairs.

8.15.1. Method

Confirm that the power is turned on:

1. Press the “OPEN/CLOSE” button to close the tray.

2. Press the “POWER” button to turn off the power.

3. Disconnect the power plug from the outlet.

8.15.2. Precautions

Do not disconnect the power plug from the outlet with the tray still open, then close the tray manually.

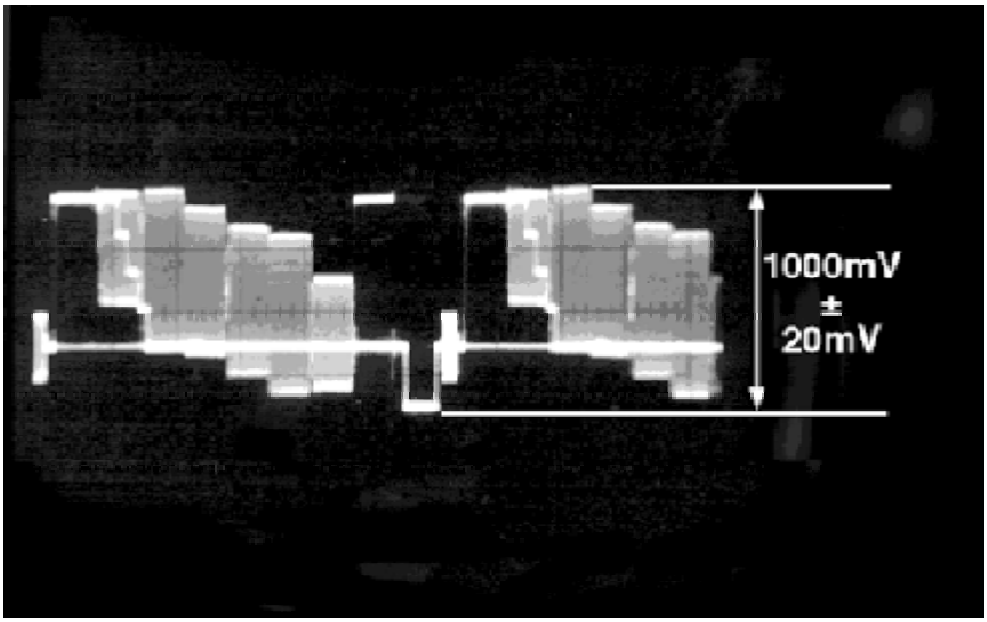
9. Electrical Adjustment

9.1. Video Output (Brightness Signal) adjustment

Carry out this adjustment after board replacement.

Measurement Point	Adjustment Mode	Test Disc
Video output jac	Colour bar 75%Playback (Title 46) : DVDT-S15Playback (Title 12): DVDT-S15	DVDT- S15orDVDT-S01
Required equirmentScrewdriver, oscilloscope	Adjustment	
	1000mVp-p±20mV	

Purpose: To ensure compatibility of video signal output.
1. Connect the oscilloscope to the video output jacks and set 75 Ω .

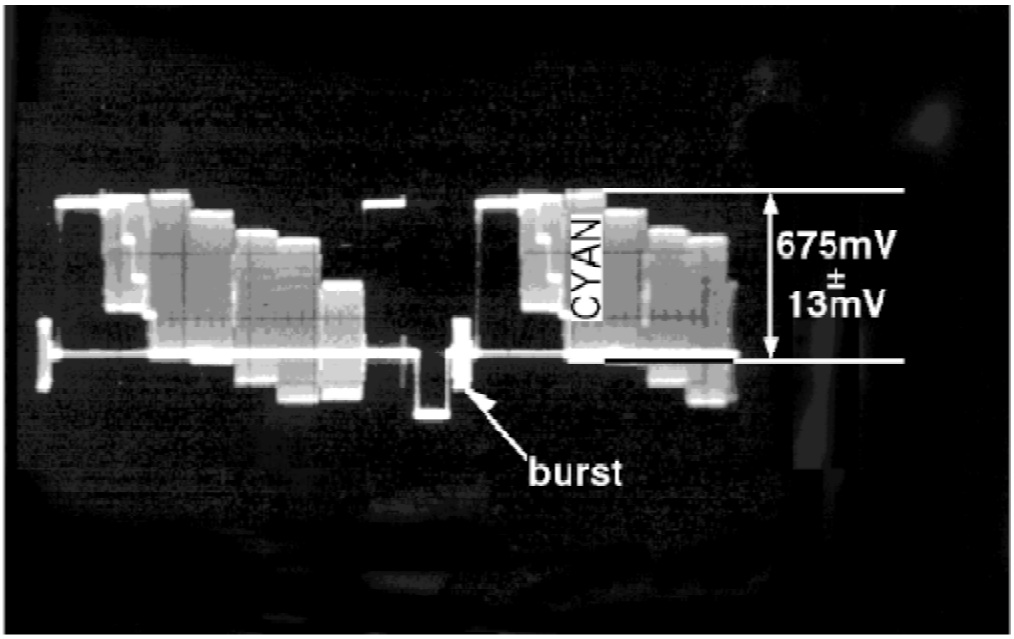


9.2. Video Output (Colour Signal) adjustment

Carry out this adjustment after board replacement.

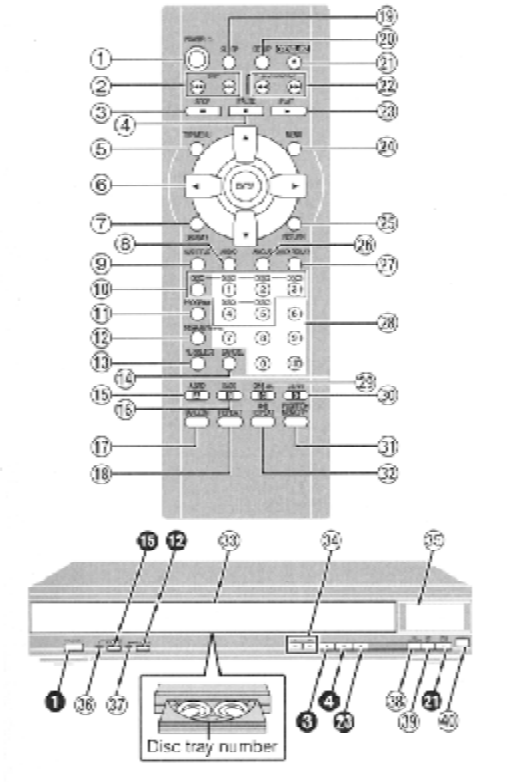
Measurement Point	Adjustment Mode	Test Disc
Video output jac	Colour bar 75%Playback (Title 46) : DVDT-S15Playback (Title 12): DVDT-S15	DVDT- S15orDVDT-S01
Required equirmentScrewdriver, oscilloscope200mV/ div, 10 μ sec/div	Adjustment	
	675mVp-p±13mV	

Purpose: To ensure compatibility of video signal output.
1. Connect the oscilloscope to the video output jacks and set 75 Ω .



10. Operation Procedure

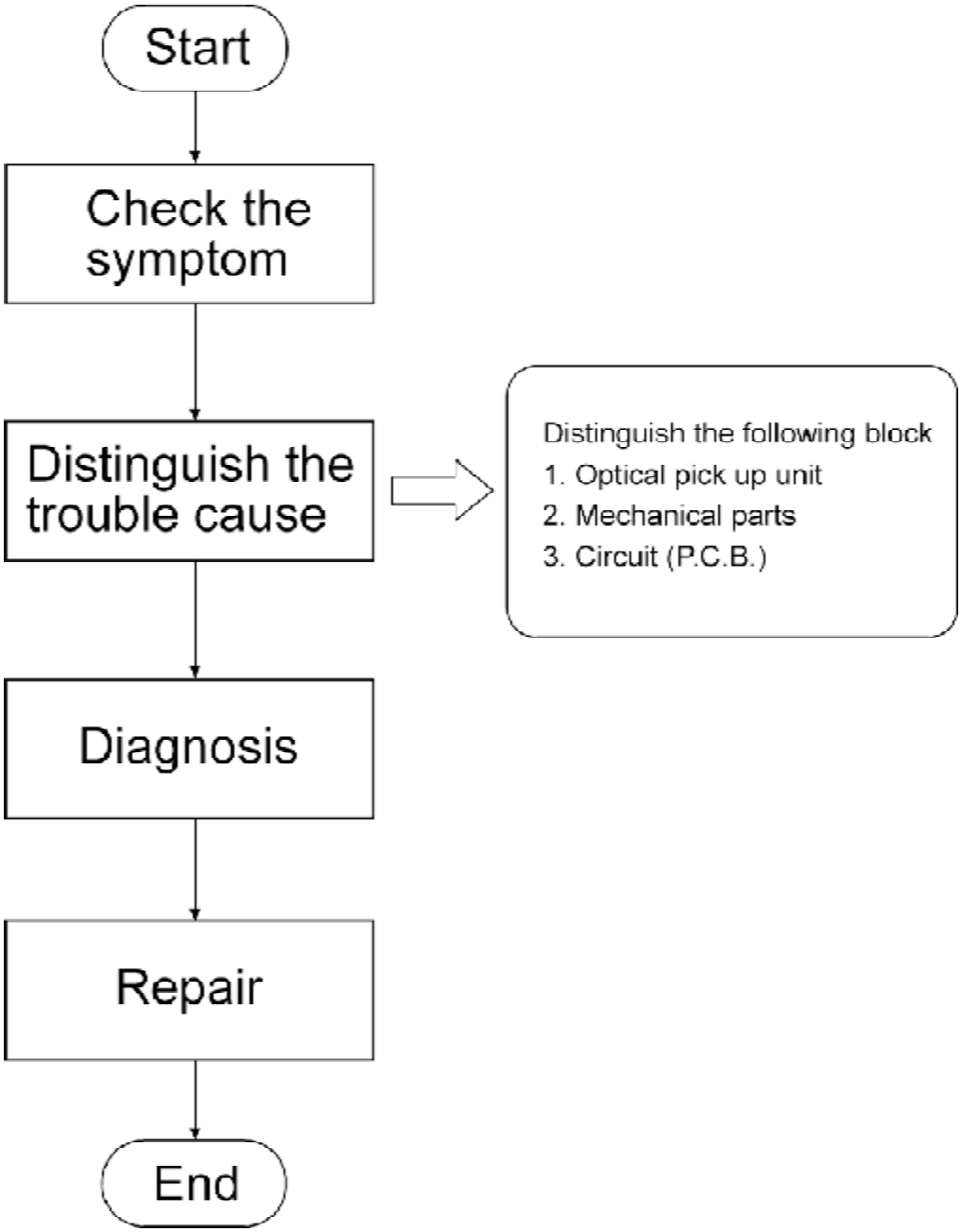
Control reference guide



Buttons such as ❶ function the same as the controls on the remote control.

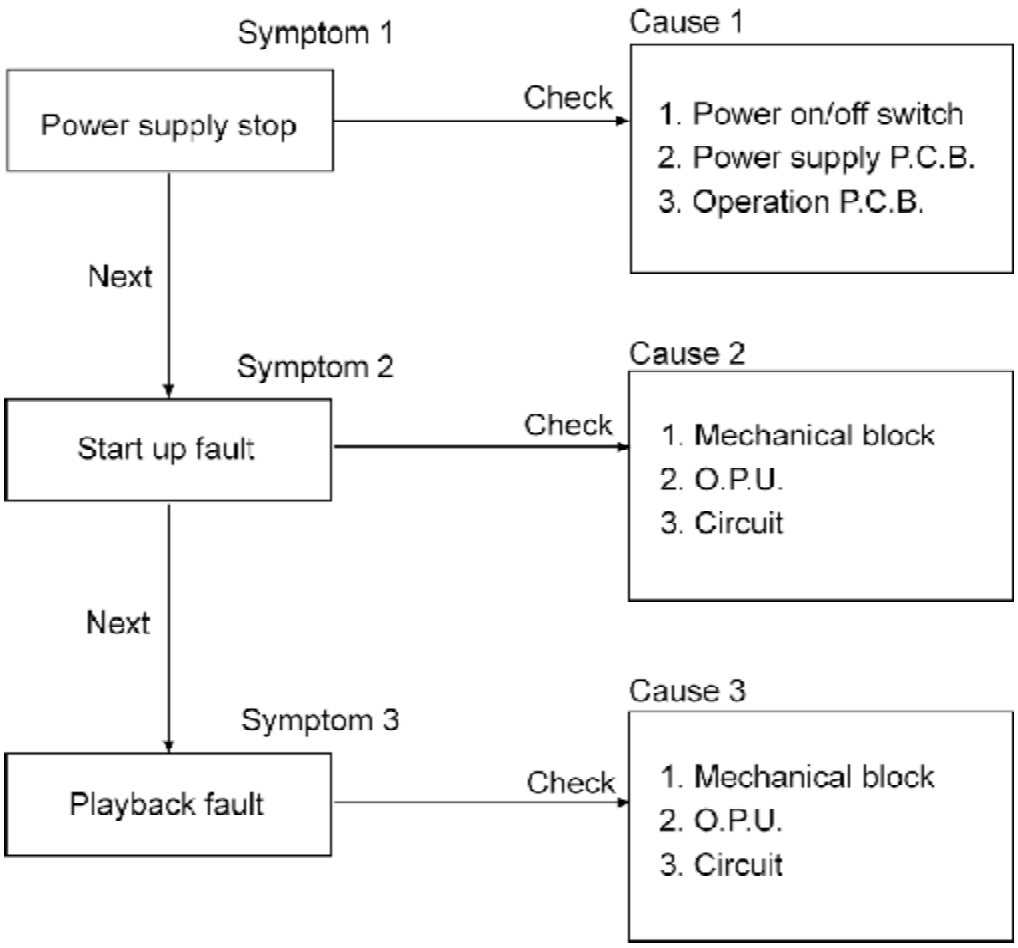
① Standby/on switch (POWER ⏻)
Press to switch the unit from on to standby mode or vice versa.
In standby mode, the unit is still consuming a small amount of power.
② Skip buttons (⏮, ⏭ SKIP)
③ Stop button (■ STOP)
④ Pause button (❚❚ PAUSE)
⑤ Top menu button (TOP MENU)
⑥ Cursor buttons (▲, ▼, ◄, ►)/Enter button (ENTER)
⑦ Display button (DISPLAY)
⑧ Audio button (AUDIO)
⑨ Subtitle button (SUBTITLE)
⑩ Disc select button (DISC), Disc buttons (DISC1 – DISC5)
⑪ Program button (PROGRAM)
⑫ Sequential button (SEQUENTIAL)
⑬ FL select button (FL SELECT)
⑭ Cancel button (CANCEL)
⑮ Advanced Surround button (A A.SRD)
⑯ Bass plus button (B BASS)
⑰ Random play button (RANDOM)
⑱ Repeat button (REPEAT)
⑲ Sleep button (SLEEP)
⑳ Setup button (SETUP)
㉑ Drawer open/close button (⏏ OPEN/CLOSE)
㉒ Slow/Search buttons (◄◄, ►► SLOW/SEARCH)
㉓ Play button (► PLAY)
㉔ Menu button (MENU)
㉕ Return button (RETURN)
㉖ Angle button (ANGLE)
㉗ Quick replay button (QUICK REPLAY)
㉘ Numbered buttons (1–9, 0, ≥10)
㉙ Cinema button (C CINEMA)
㉚ Dialogue Enhancer button (D D.ENH)
㉛ Position memory button (POSITION MEMORY)
㉜ A-B repeat button (A-B REPEAT)
㉝ Drawer
㉞ Skip, Search buttons (⏮ ◄◄, ►► ⏭)
㉟ Display
㊱ Advanced Surround indicator
㊲ CD sequential indicator
㊳ Disc exchange button (DISC EXCHANGE)
㊴ Disc skip button (DISC SKIP)
㊵ Remote control signal sensor

11. Procedure for reparing the set



11.1. Distinguish the trouble cause

• Check flow



How to distinguish the trouble

1. View mechanical part if visual damage occurred.
Confirm the movement of mechanical parts assembly (tray ass'y, loading mechanism ass'y, etc.).

2. Diagnose if Optical Pickup Unit is faulty (refer to diagnosis of Optical Pickup Unit).

3. If mechanism and OPU are OK, it is P.C.B.

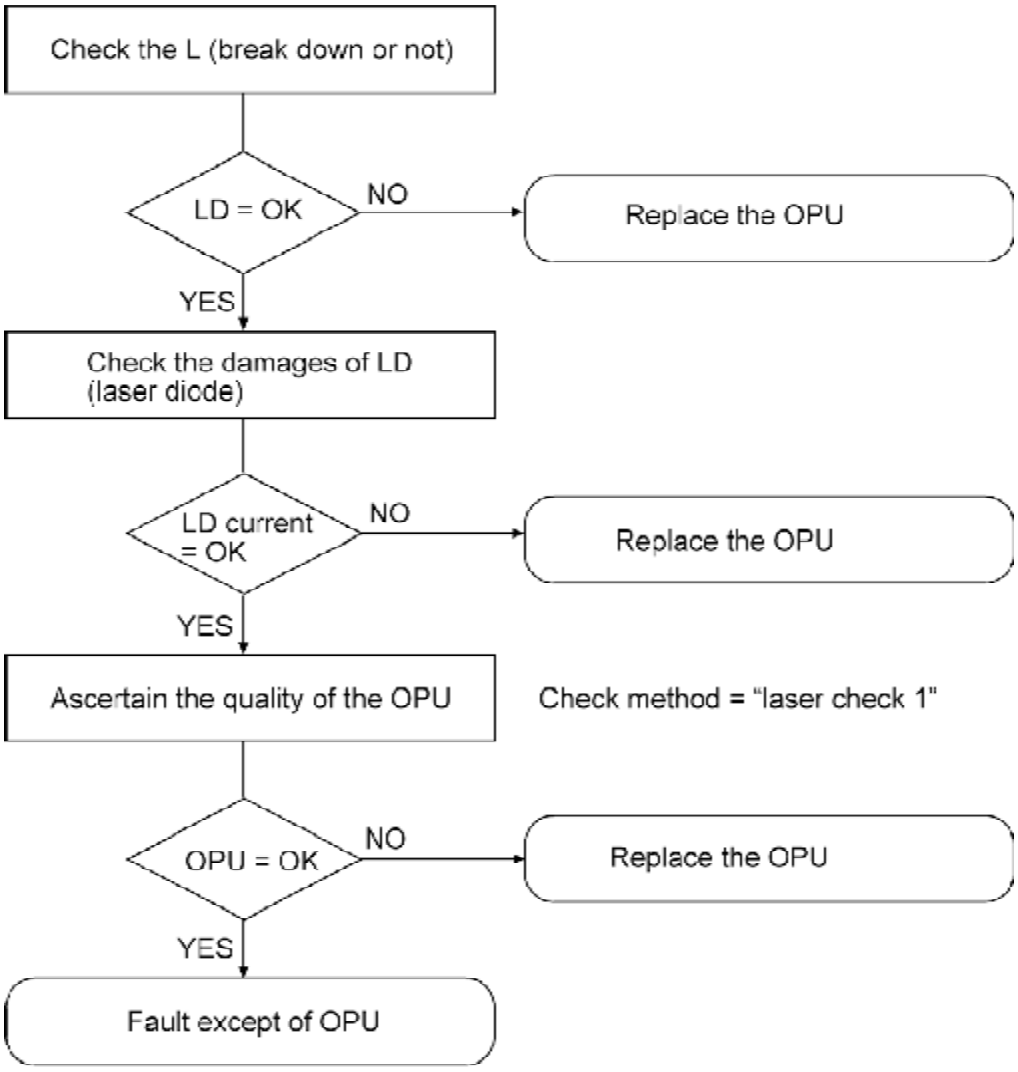
Cause 1	Possible fault
1. Power ON/OFF switch	Power switch, connector cable
2. Power supply P.C.B.	D1011, T1021, Q1051 etc.
3. Operational P.C.B.	CPU (IC6001), X6001, IC6002 etc.

Cause 2	Possible fault
1. Mechanical block	Tray and loading mechanical block, traverse
2. O.P.U.	Refer to the diagnosis of OPU
3. Circuit	LD drive, servo (Traverse, Focus, Tracking) Disc sensor Signal processing (FEP, ADSC etc.)

Cause 3	Possible fault
1. Mechanical block	Traverse block (Tilt adjustment)
2. O.P.U.	Refer to the diagnosis of OPU
3. Circuit	Servo (Focus, tracking) Signal processing (FEP, ODC, AVDEC, A-DAC etc.)

11.2. Diagnosis of Optical Pick-up Unit

Diagnosis Method
Diagnose the OPU by the following procedure



Note : When LD does not emit light after replacing the OPU, check the LD drive circuit in the module P.C.B.

How to distinguish Laser destruction/damage
Confirmation 1
Remove cover of mechanism block so that you will see the lens of optical pickup.
Confirm emission of laser at the moment when power switch is turned on.
If there is no laser emission, laser diode is faulty.
Confirmation 2
While holding "Pause" and "Open/Close" button, press "Display" button on the remote controller. Unit display laser current on FL.
From the reading of display, you can judge if laser diode is damaged or not.
Reading on the right side should be less than 70. If reading is more than 70, laser is damaged.

How to confirm if Optical Pickup is OK
Confirmation 1

1. **Confirmation of jitter value with test disc. (Refer below for how to check jitter)**
2. **Lens cleaning.**
3. **Reconfirm jitter value.**
4. **Perform tile adjustment. (Refer to tilt adjustment)**
5. **Reconfirm jitter value. (To confirm jitter value, while pressing "Pause" and "Open/Close" button, press numeric "5" on remote controller.)**
   Unit display jitter value on FL.

Confirmation 2
If servo is very unstable due to optical error and you cannot confirm jitter value, clean the lens and check appearance of pick up unit (cutting coil of actuator, etc), then check circuitry.

12. Disassembly and Main Component Replacement Procedures

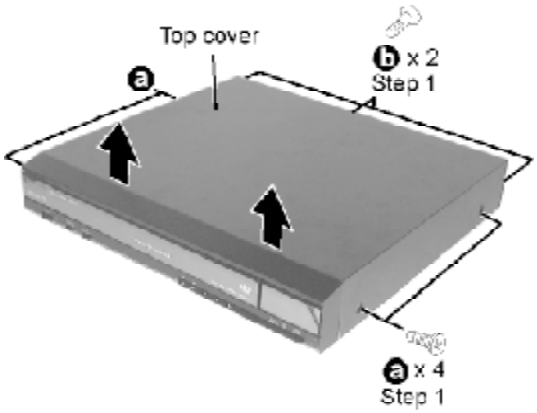
"ATTENTION SERVICER"

Some chassis components may have sharp edges.
Be careful when disassembling and servicing.

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For assembly after operation checks or replacement, reverse the respective procedures.**
   Special reassembly procedures are described only when required.
3. **Select items from the following index when checks or replacement are required.**

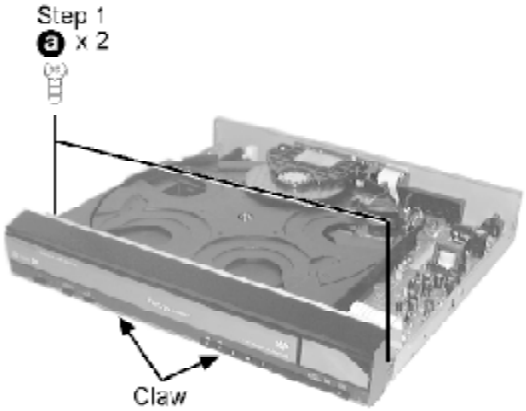
12.1. Disassembling the Top Cover

1. Remove the 4 screws each side and 3 screws at rear panel.

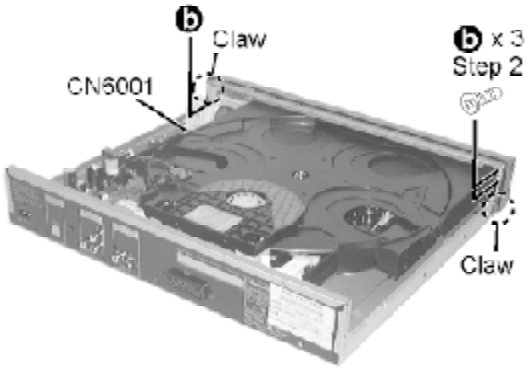


12.2. Disassembling the Front Panel

1. Remove the 2 screws.



2. Release 2 claws below.

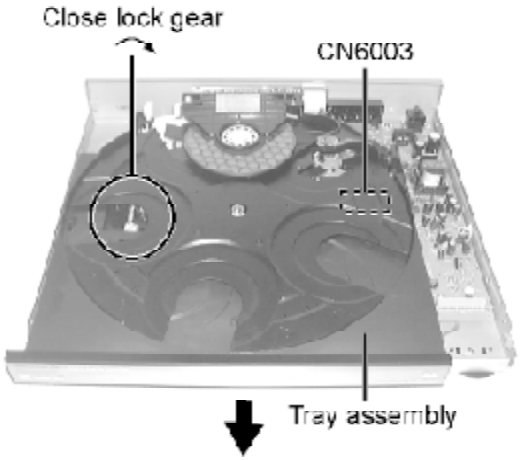


3. Remove the 3 screws behind the rear panel and disconnect CN6001.

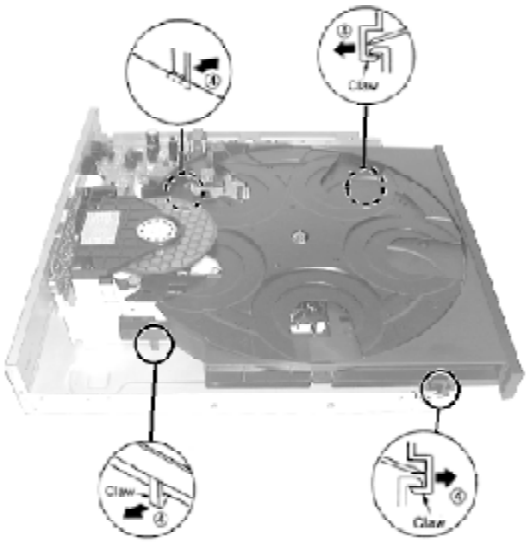
4. Release 2 claws each side.

12.3. Disassembling the Tray Assembly

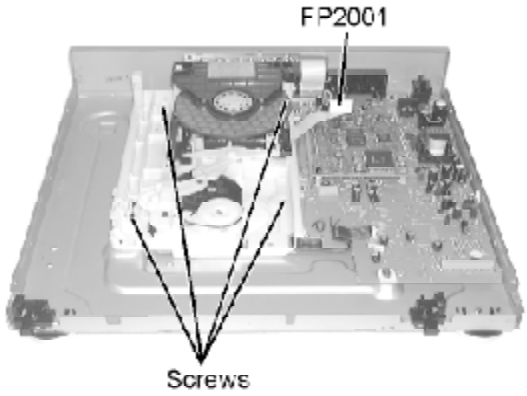
1. Keep the close lock gear pressed in clockwise, move the tray assembly in the direction of the arrow..



2. Release connector CN6002.



3. Push and release the 4 claws in the direction of arrow 3, and then remove the tray assembly in the direction of arrow 4.

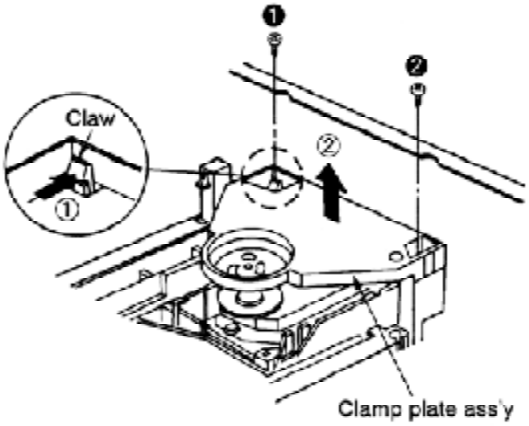


4. Pull out the FFC CN6003 and FP2001.

12.4. Disassembling the Clamp Plate Assembly

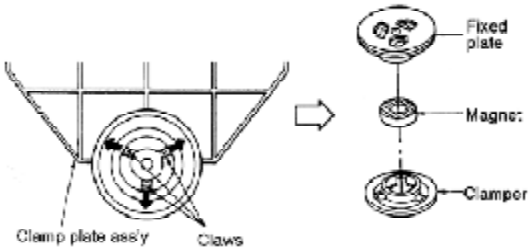
1. Remove 2 screws.

2. Push the claw in the direction of arrow 1, and then remove the clamp plate ass'y in the direction of arrow 2.



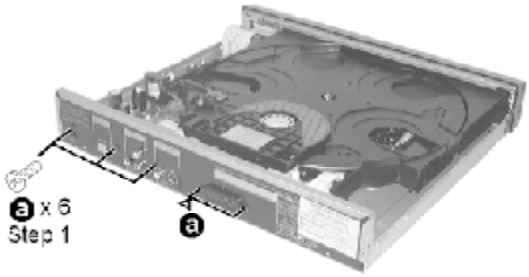
12.5. Disassembling the Fixed Plate, Magnet and Clamper

1. Release the 3 claws in the direction of arrow.

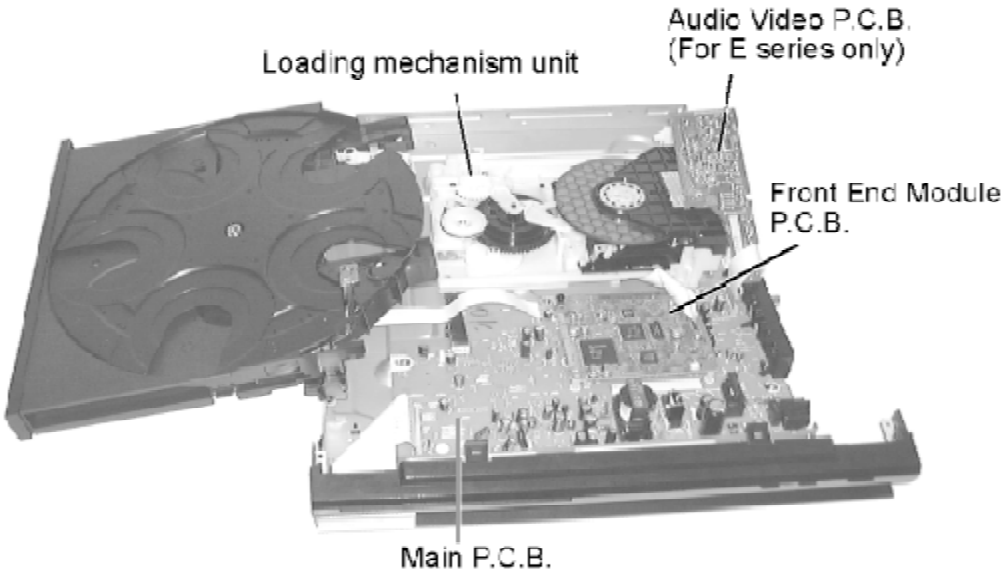


12.6. Disassembling the Rear Panel

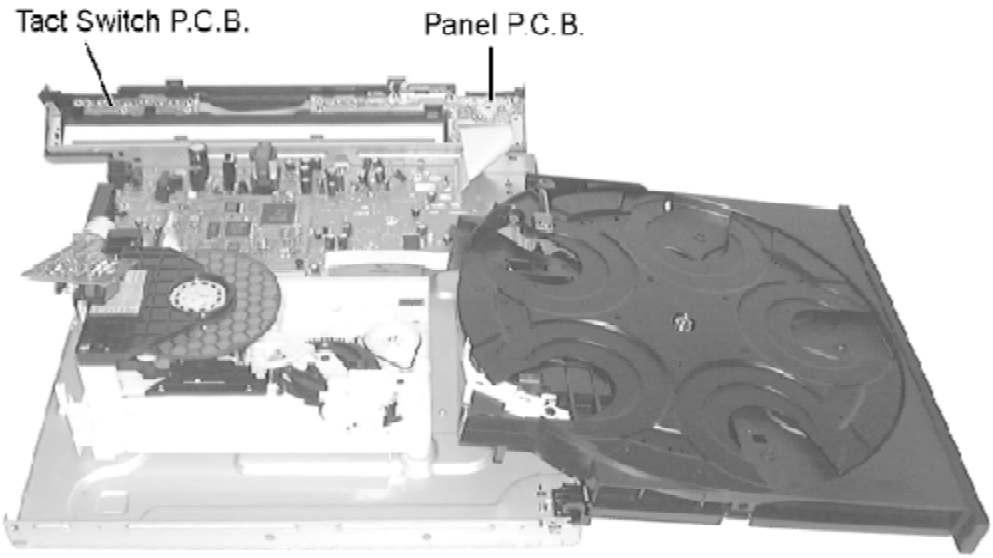
1. Remove 6 screws at the rear panel.

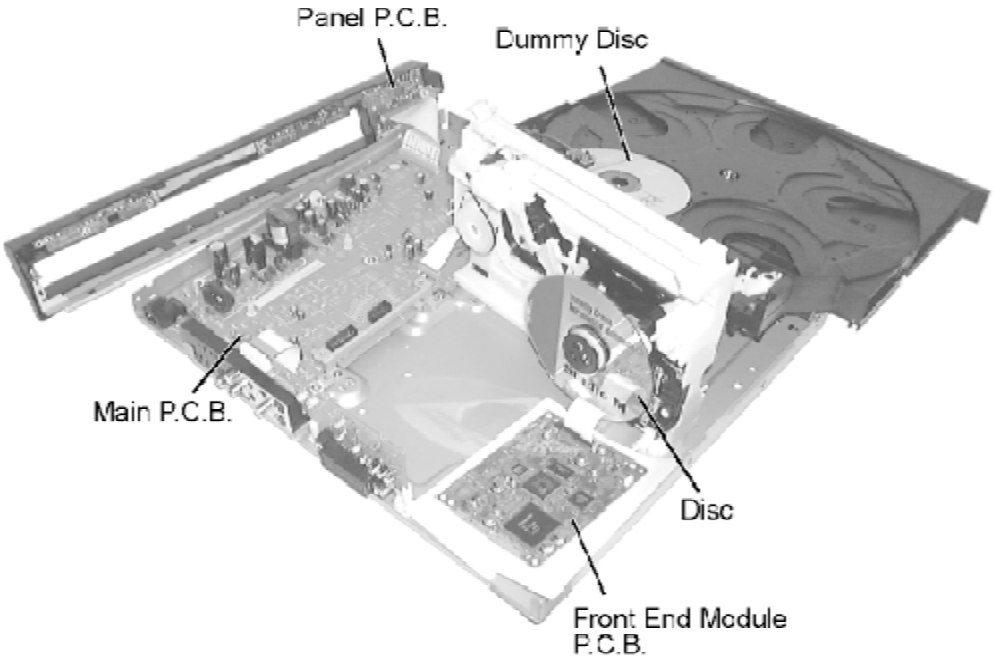


12.7. Checking for major P.C.B..

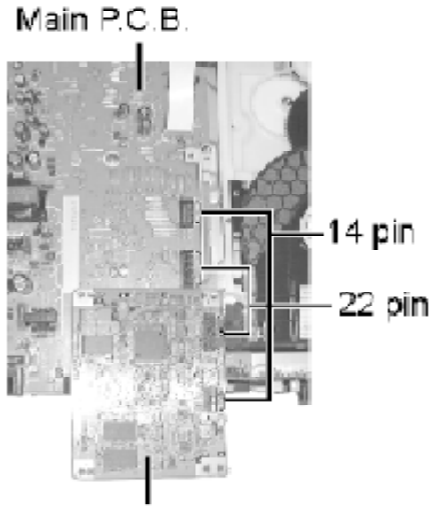


Service position for checking the Front End Module P.C.B.





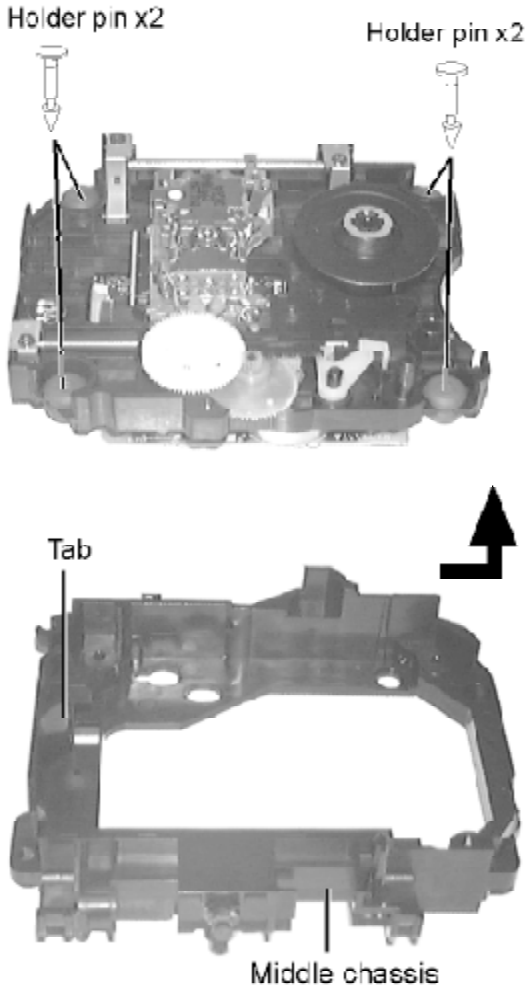
1. Set the dummy disc on the tray before playback the disc.
First, playback the disc with Loading Mechanism block in normal position, then stand up the Loading Mechanism block vertically.
Service position for Checking the foil side of Back end Module P.C.B.



Extension Cable
(Main P.C.B. to Back End
Module P.C.B.)
JGS0116 - 22 pin
VUC8026 - 14 pin

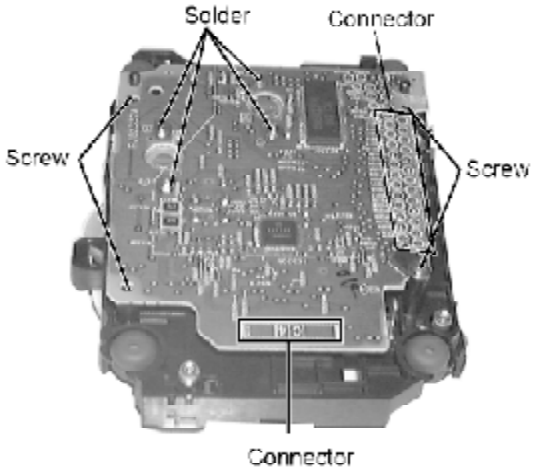
12.8. Disassembling the Middle Chassis

Step 1 Remove the holder pins.
Step 2 Remove the tab.
Step 3 It lifts while pulling it in the direction of the arrow.



12.9. Terminal P.C.B.

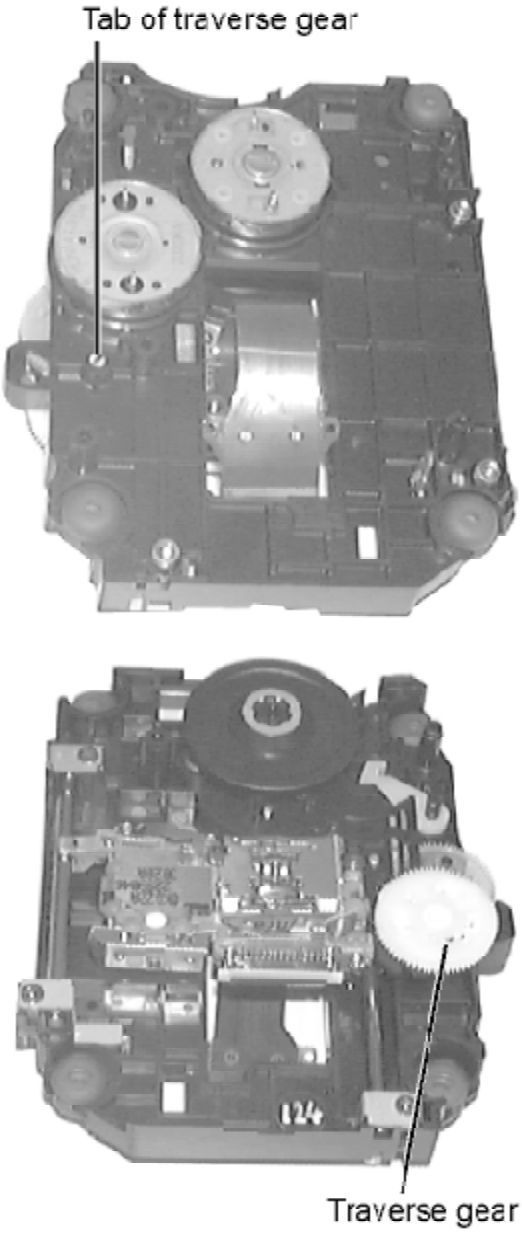
Step 1 Unscrew the screw.
Step 2 Remove the solders.
Step 3 Remove the connector.



12.10. Traverse Gear

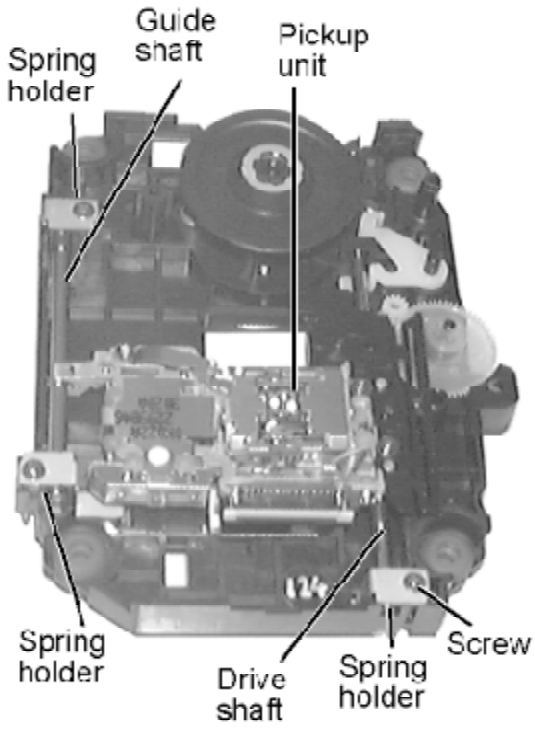
Step 1 Disengage the tabs from the traverse gear.

Step 2 Remove the traverse gear.



12.11. Optical Pickup Unit

Step 1 Unscrew the screws.
Step 2 Remove the spring holders and the springs.
Step 3 Pull out the drive shaft and guide shaft.



12.11.1. Precautions in optical pickup replacement

The optical pickup can be damaged by static electricity from your body. Be sure to take static electricity countermeasures when working around the optical pickup. (Refer to the related page in this Manual about the countermeasures.)

1. **Do not touch laser diode, actuator and their peripheries.**
2. **Do not use tester to check laser diode. (Laser diode can be damaged easily.)**
3. **The use of soldering iron with anti-static feature is recommended when providing short-circuit to laser diode or when removing it.**
4. **Solder the land on flexible cable of optical pickup unit.**

Caution

- **When using the soldering iron without anti-static feature, short circuit the flexible cable terminal with a clip before short-circuiting the land.**
- **After intended repair is finished, remove the solder for short-circuit of laser diode in a correct way following the procedure described in this Manual.**

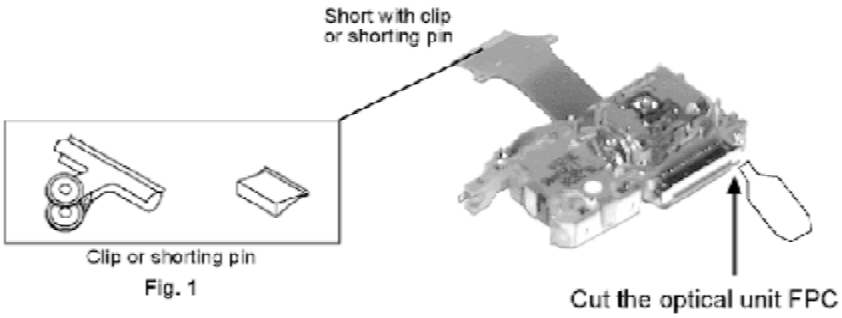
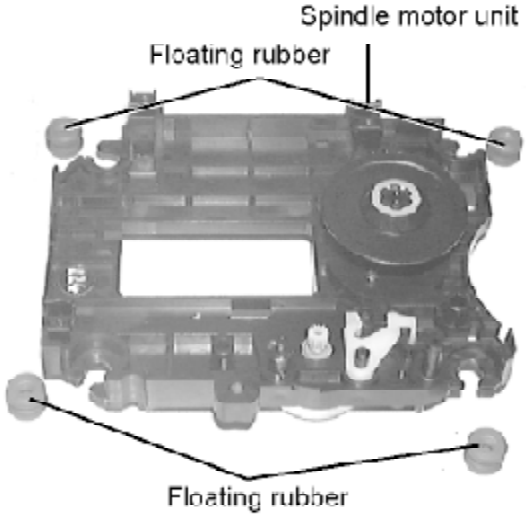


Fig. 1

12.12. Disassembling the Spindle Motor Unit

Step 1 Remove the floating rubbers.



13. Adjustment Procedures

13.1. Service Tools and Equipment

Application	Name	Number
Tilt adjustment	DVD test disc	DVDT-S15 or DVDT-S01
	Hex wrench	Available on sale route.
Inspection	Extension cable (module P.C.B. to mother P.C.B.)	JGS0116
	Extension cable (module P.C.B. to mother P.C.B.)	VUC8026
Others	Screw lock	RZZ0L01
	Frease (1)	RFKXGAK152
	Grease (2)	RFKXGP641
	Oil (1)	RFKXGA1280
Confirmation	CD test disc	PVCD-K06 or any other commercial available disc
	VCD test disc	PVCD-K06 or any other commer available disc
	Recovery disc	RFKZD5TR006

13.2. Important points in adjustment

13.2.1. Important points in optical adjustment

- Before starting optical adjustment, be sure to take anti-static measures.

- Optical pickup tilt adjustment is needed after replacement of the following components.

1. Optical pickup unit.

2. Spindle motor unit.

3. Optical pickup peripheral parts (such as rail).

Notes

Adjustment is generally unnecessary after replacing other parts of the traverse unit. However, make adjustment if there is a noticeable degradation in picture quality. Optical adjustments cannot be made inside the optical pickup. Adjustment is generally unnecessary after replacing in traverse unit.

13.2.2. Important points in electrical adjustment

- Follow the adjustment procedures described in this Manual.

13.3. Storing and Handling Test Discs

- Surface precision is vital for DVD test discs. Be sure to store and handle them carefully.

1. Do not place discs directly onto the workbench, etc,. after use.

2. Handle disc carefully in order to maintain their flatness. Place them into their case after use and store them vertically. Store disc

in a cool place where they are not exposed to direct sunlight or air from air conditioners.

3. Accurate adjustment will not be possible if the disc is warped when placed on a surface made of glass, etc. If this happens, use a new test disc to make optical adjustment.
4. If adjustment is done using a warped disc, the adjustment will be incorrect and some discs will not be playable.

13.4. Optical adjustment

13.4.1. Optical pickup tilt adjustment

Measurement point	Adjustment point	Mode	Disc
	Tangential adjustment screwTilt adjustment screw	T01 (inner periphery) playT43 (outer periphery) play	DVDR-S15 or DV
Measuring equipment		Adjustment value	
None (Main unit display for servicing is used.)		Adjustment to the minimum jitter value.	

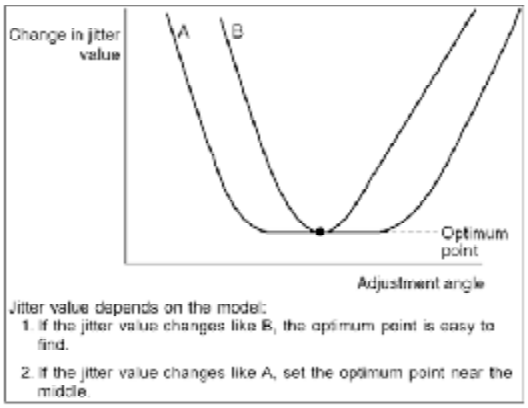
13.4.1.1. Adjustment procedure

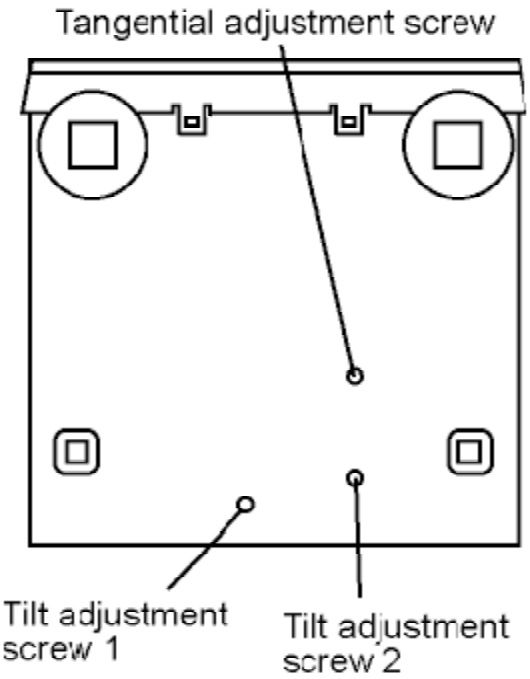
1. Whie pressing PAUSE and OPEN/CLOSE buttons on the main unit, press “5” on the remote control unit.
2. Confirm that “J_xxx_yyy_zz” is shown on the front display.
   For your information:
   “yyy” and “zz” shown to the right have nothing to do with the jitter value. “yyy” is the error counter, while “zz” is the focus drive value.
   Note:
   Jitter value appears on the front display.
3. Play test disc T01 (inner periphery).
4. Adjust tangential adjustment screw so that the jitter value is minimized.
5. Play test disc T43 (outer periphery).
6. Adjust tilt adjustment screw 1 so that the jitter value is minimized.
7. Play test disc T43 (outer periphery).
8. Adjust tilt adjustment screw 2 so that the jitter value is minimized.
9. Repeat adjusting tilt adjustment screw 1 and 2 alternately unitl

the jitter value is minimized.

13.4.1.2. Important points

1. **Make tangential adjustment first, and then make tilt adjustment.**
2. **Repeat adjusting two or three times to find the optimum point.**
3. **Finish the procedure with tilt adjustment.**


Change in jitter value
A
B
Optimum point
Adjustment angle
Jitter value depends on the model:
1. If the jitter value changes like B, the optimum point is easy to find.
2. If the jitter value changes like A, set the optimum point near the middle.



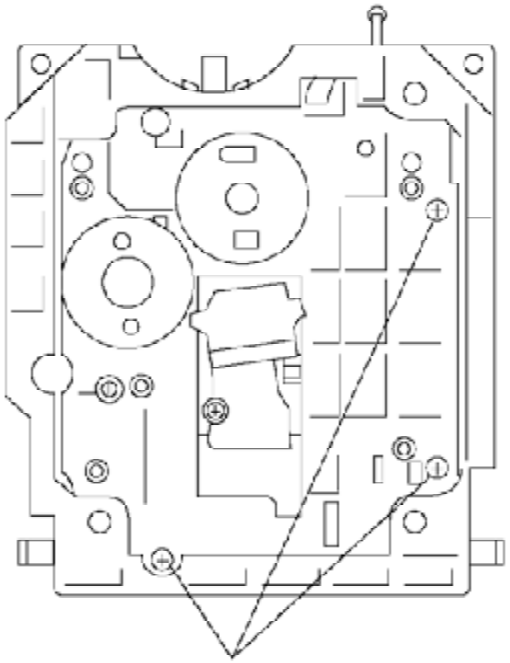
13.4.1.3. Check after adjustment

Play test disc or any other disc to make sure there is no picture degradation in the inner, middle and outer peripheries, and no audio skipping. After adjustment is finished, lock each adjustment screw in position using screw lock.

13.4.1.4. Procedure for screw lock

1. **After adjustment, remove top cover, tray, clamper base and traverse unit in this sequence.**

2. **Lay the traverse unit upside down, and fix adjustment screw with screw lock.**
3. **After fixing, reassemble traverse unit, clamper base, tray and top cover.**



14. Terminal Function of IC's

14.1. IC6001 (MN101C35DCN) System Microprocessor

Pin No.	Mark	I/O	Function
1	CMD	O	Serial output
2	STAT	I	Serial input
3	DSPCLK	I	Serial clock
4	P03	O	Not used
5	P04	O	Not used
6	P05	O	Not used
7	P06	O	Port
8	VDD	I	5V
9	OSC2	O	Clock
10	OSC1	I	Clock
11	VSS	I	GND
12	XI	I	Not used
13	XO	O	Not used
14	MMOD	I	Memory mode L
15	VREF-	I	A/D reference L
16	KEYIN0	I	A/D key input
17	KEYIN1	I	A/D key input
18	KEYIN2	I	A/D key input
19	PA3	I	Port
20	PA4	I	Port
21	PA5	I	Port
22	PA6	I	Port
23	PA7	I	Port
24	VREF+	I	A/D reference H
25	P07	O	Mecha control
26	RST	I	Reset
27	O-TURN	O	Mecha control
28	O-DIR	O	Mecha control
29	O-PWM	O	Mecha control
30	0_P-OFF	O	Power OFF
31	POWER-MUTE	O	Power mute
32	WIDE1	O	
33	REMOCON	I	Remote controller input
34	P21	I	Disc_Sens
35	P22	I	Tray open
36	I POSITI	I	Mecha control
37	I SPEED	I	Mecha control
38	P25	I	Not used
39	P30	O	Not used
40	P31	O	Mute
41	P32	O	0.1 CH
42	O STBY-LED	O	LED

	LED		

Pin No.	Mark	I/O	Function
43	P51	O	LED
44	P52	O	LED
45	P53	O	LED
46	P54	O	LED
47-63	DGT17-DGT1	O	FL-DGT
64-99	SEG7-SEG42	O	FL-SEG
100	VPP	I	FL-23V

15. Block Diagram

16. Schematic Diagram

(All schematic diagrams may be modified at any time with the development of the new technology)

Note:

S551

: Switch

S6401

: Stop switch

S6402

: Pause switch

S6403

: Play switch

S6404

: Disc Exchange switch

S6405

: Disc Skip switch

S6406

: Reverse Skip switch

S6407

: Forward Skip switch

S6408

: Open/ Close switch

S6409

: Power switch

S6410

: A. Surd. switch

S6411

: CD SEQ switch

SW2501

: Leaf switch

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

No mark	: Playback	<< >>	: Rec	< >	: FM
(( ))	: CD	( )	: AM	[ ]	: AUX

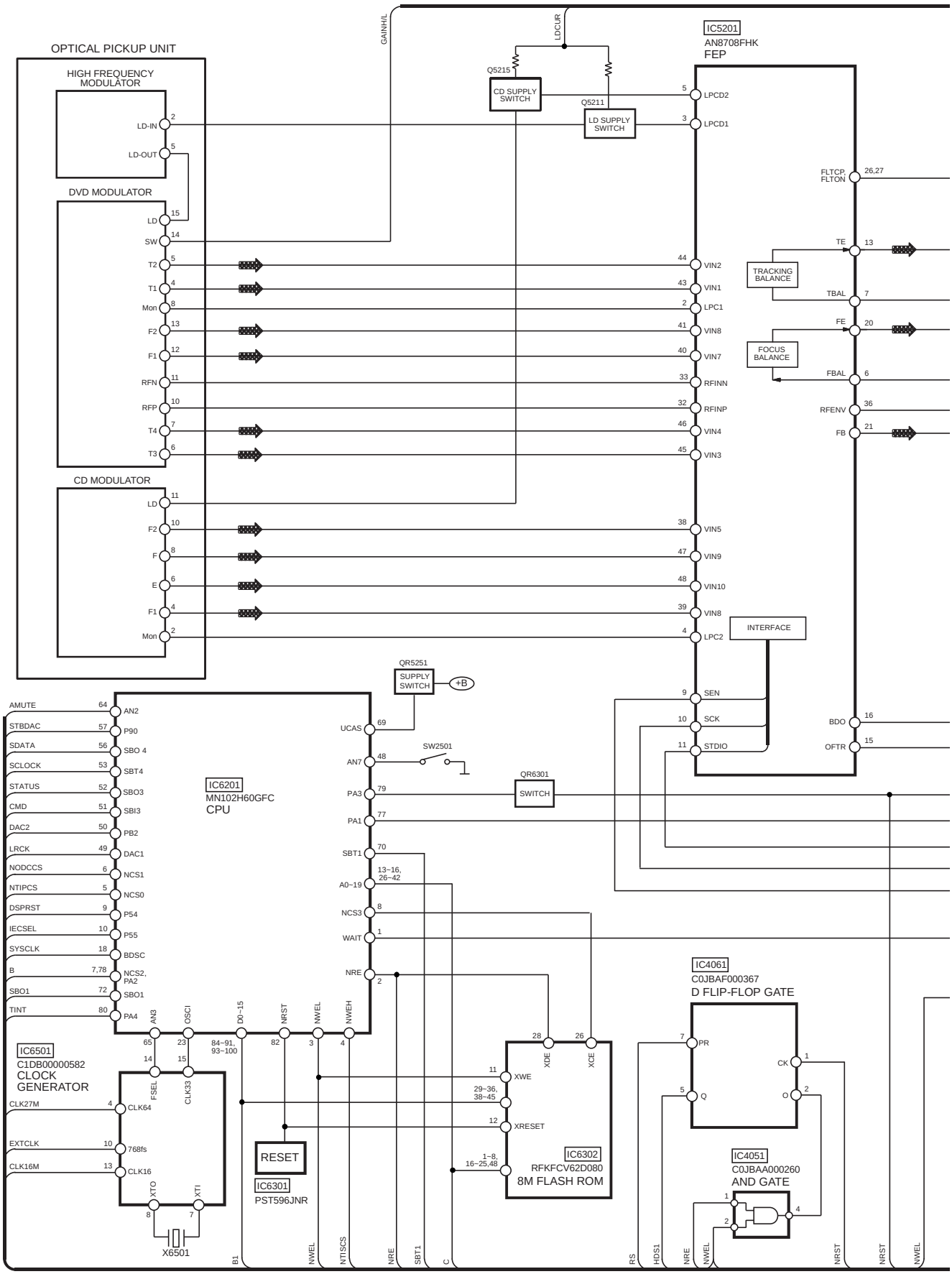
- Importance safety notice :

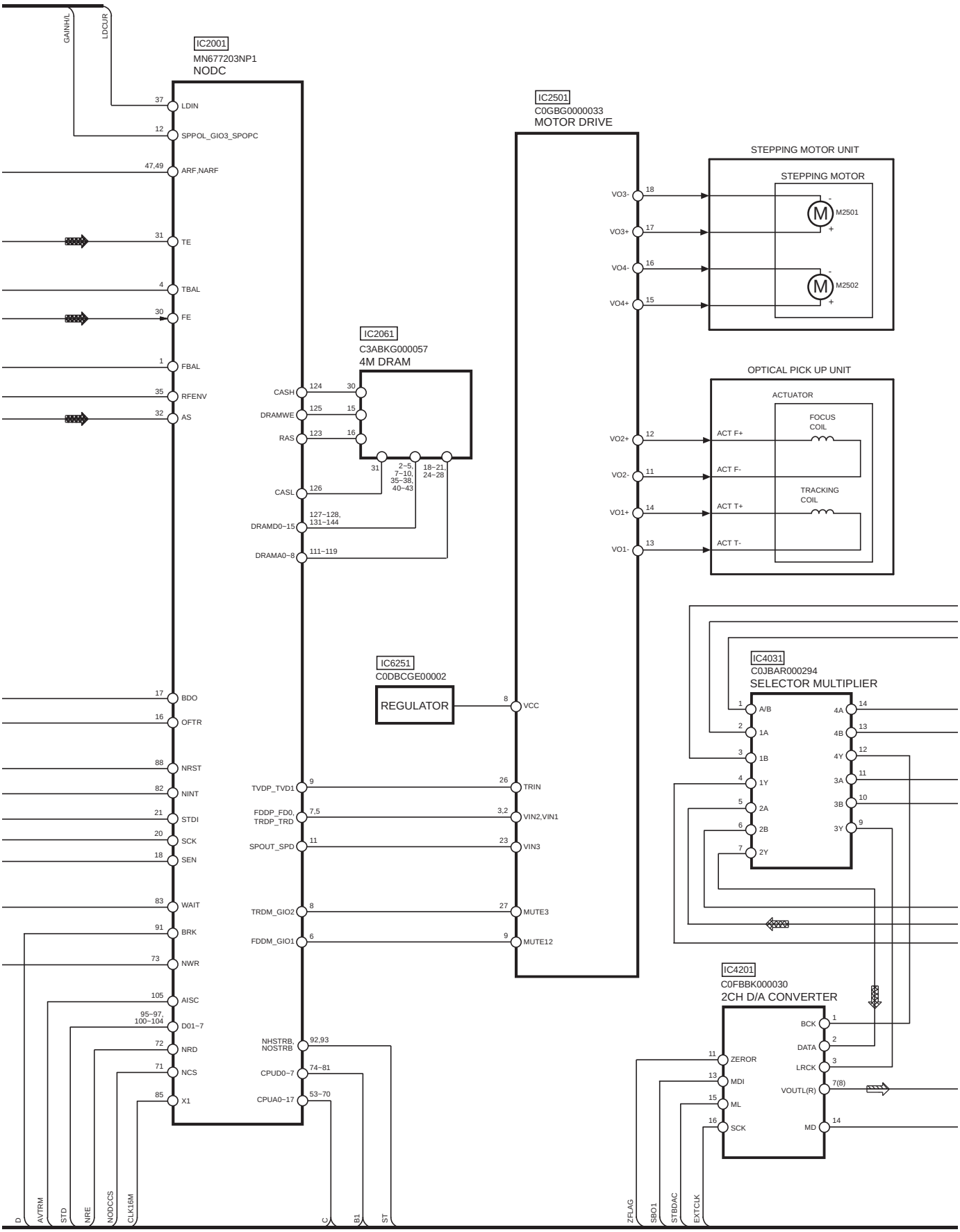
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

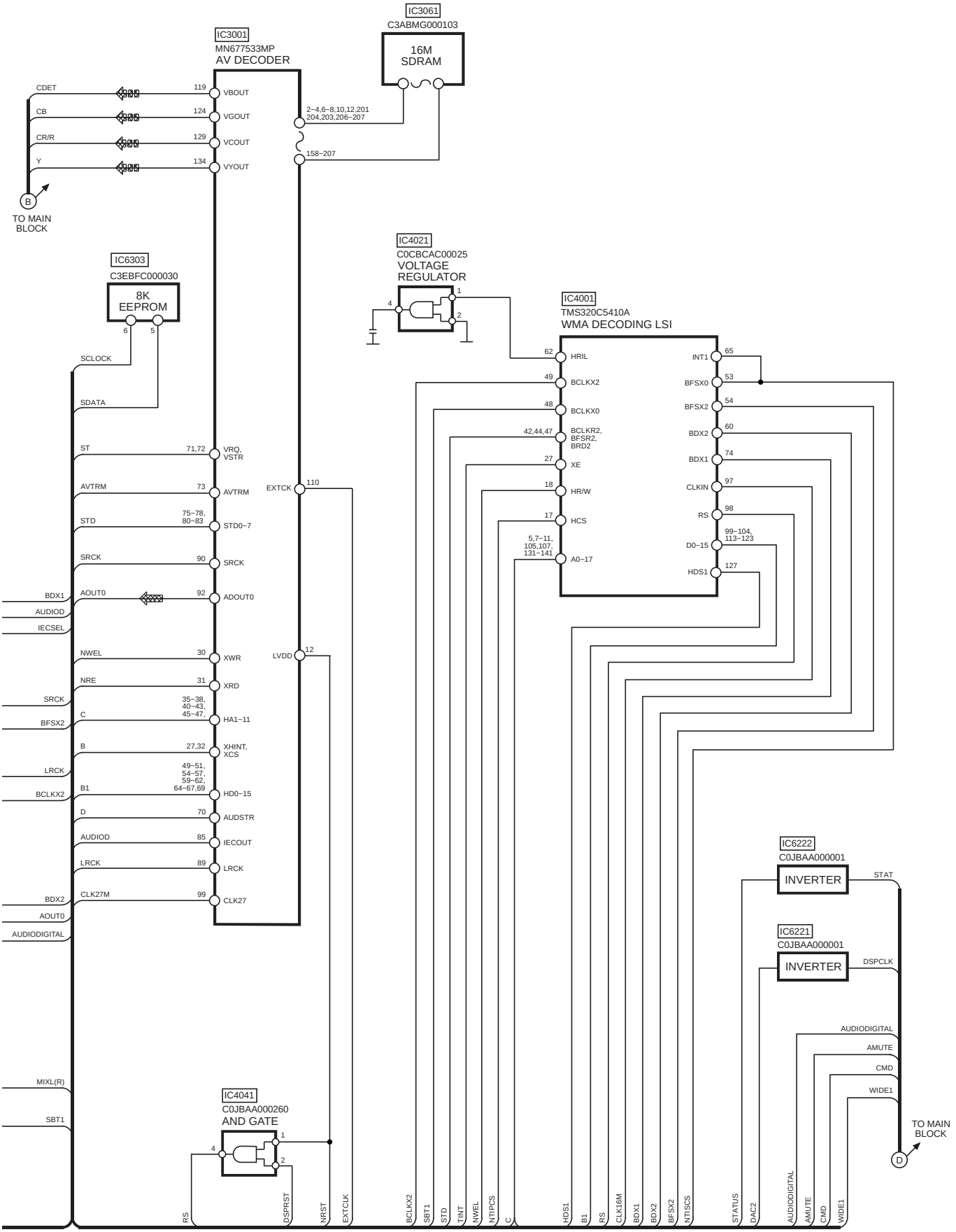
Caution !

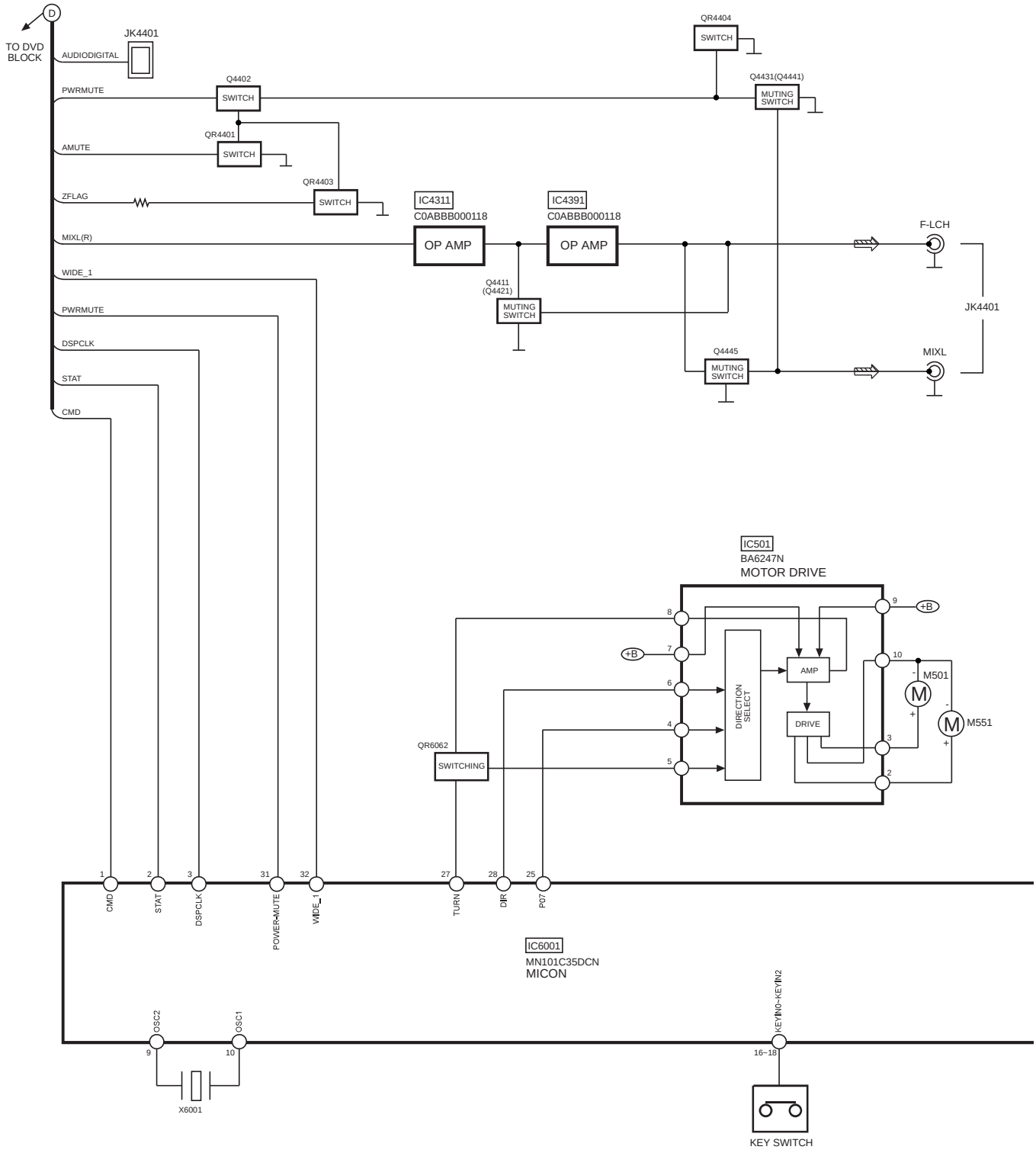
IC, LSI and VLSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

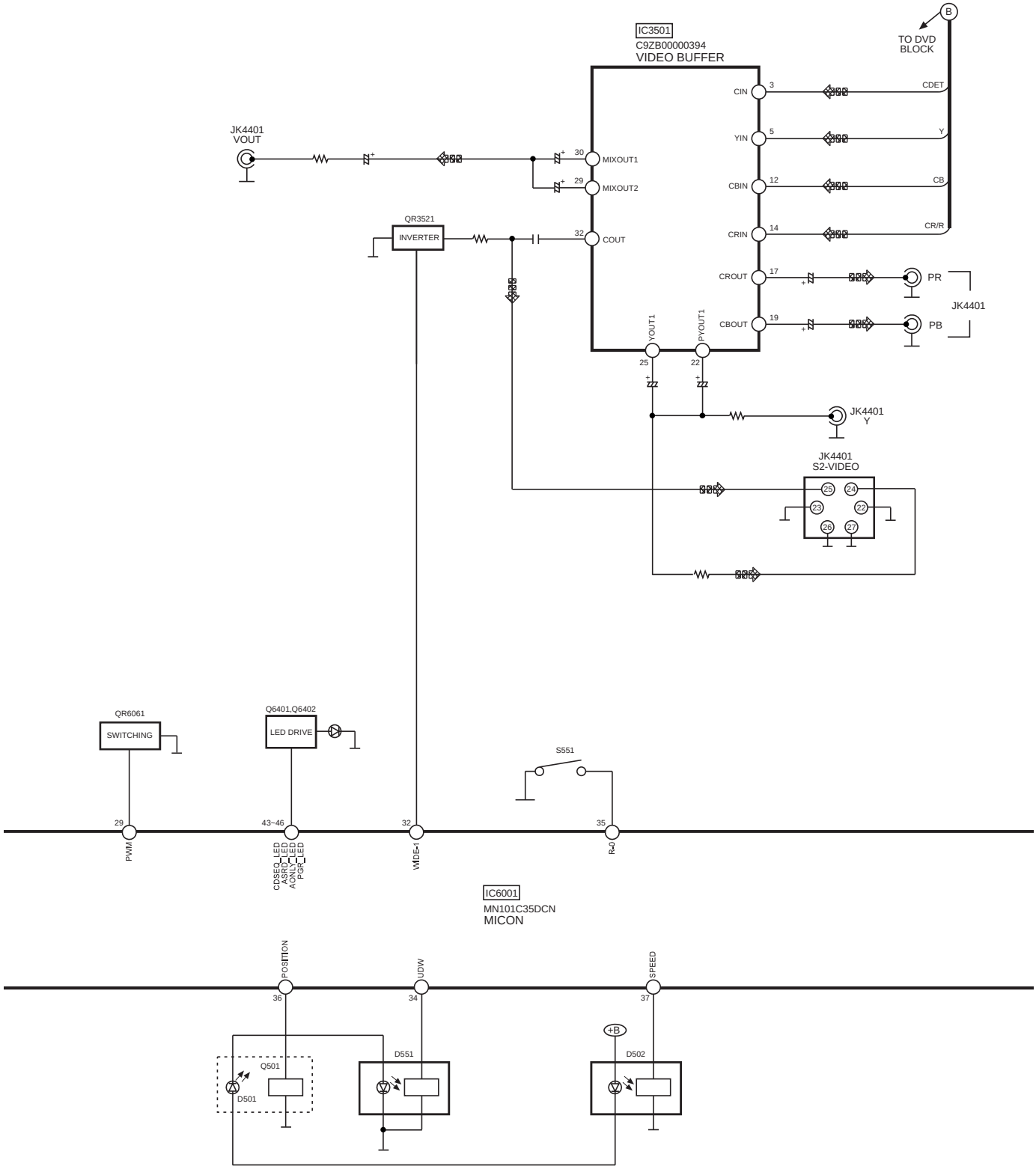
- Cover the parts boxes made of plastics with aluminium foil.
- Put a conductive mat on the work table.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.

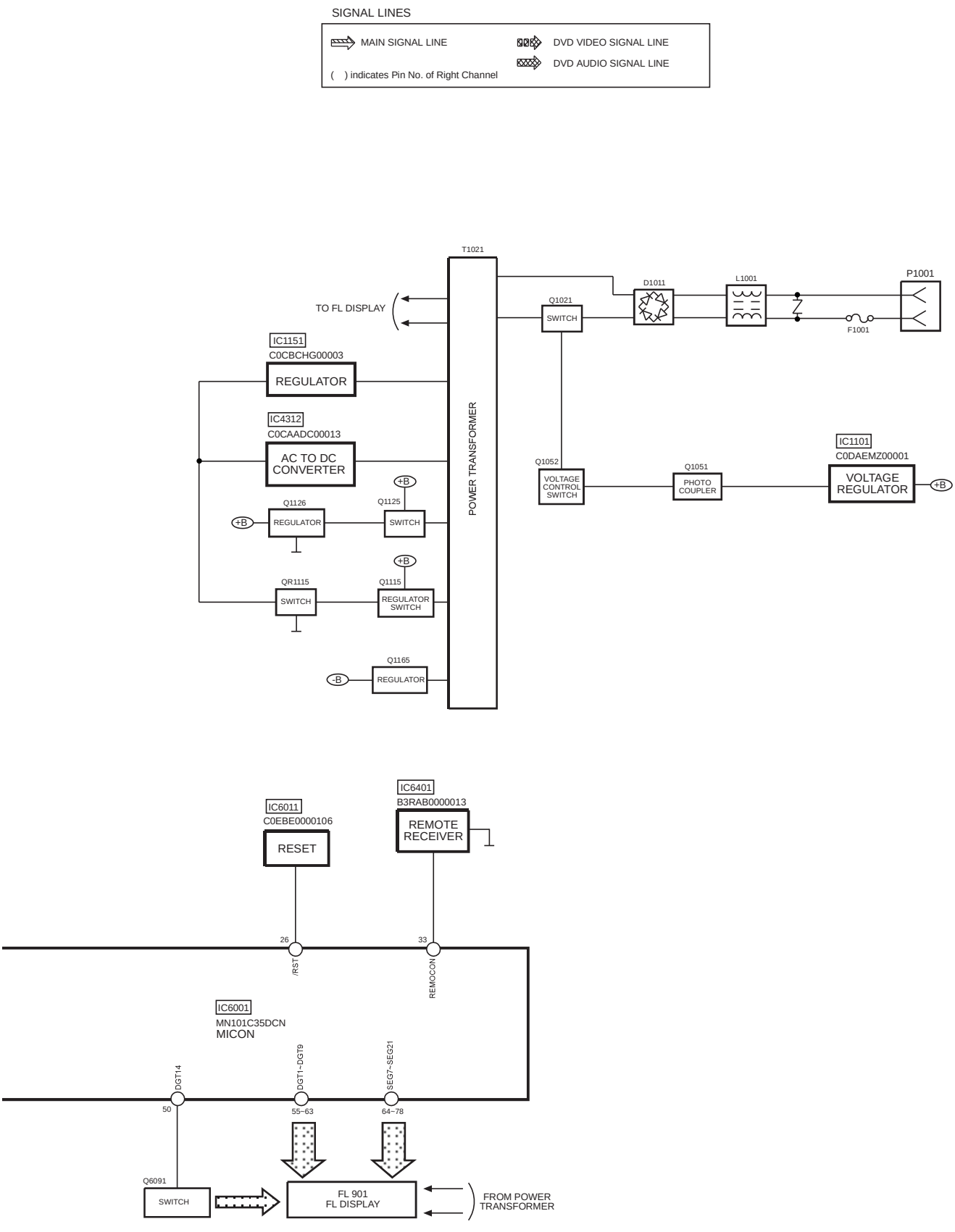

OPTICAL PICKUP UNIT
HIGH FREQUENCY MODULATOR
LD-IN
LD-OUT
DVD MODULATOR
LD
SW
T2
T1
Mon
F2
F1
RFN
RFP
T4
T3
CD MODULATOR
LD
F2
F
E
F1
Mon
GAINH/L
LDCUR
Q5215
CD SUPPLY SWITCH
Q5211
LD SUPPLY SWITCH
IC5201
AN8708FHK
FEP
LPCD2
LPCD1
VIN2
VIN1
LPC1
VIN8
VIN7
RFINN
RFINP
VIN4
VIN3
VIN5
VIN9
VIN10
VIN8
LPC2
FLTCP, FLTON
TE
TRACKING BALANCE
TBAL
FE
FOCUS BALANCE
FBAL
RFENV
FB
INTERFACE
SEN
SCK
STDIO
BDO
OFTR
QR5251
SUPPLY SWITCH
+B
SW2501
QR6301
SWITCH
IC6201
MN102H60GFC
CPU
AMUTE
STBDAC
SDATA
SCLOCK
STATUS
CMD
DAC2
LRCK
NODCCS
NTIPCS
DSPRST
IECSEL
SYSCLK
B
SBO1
TINT
AN2
P90
SBO 4
SBT4
SBO3
SBI3
PB2
DAC1
NCS1
NCS0
P54
P55
BDSC
NCS2, PA2
SBO1
PA4
UCAS
AN7
PA3
PA1
SBT1
A0–19
NCS3
WAIT
NRE
AN3
OSCI
D0–15
NRST
NWEL
NWEH
IC6501
C1DB00000582
CLOCK GENERATOR
FSEL
CLK33
CLK27M
CLK64
EXTCLK
768fs
CLK16M
CLK16
XTO
XTI
X6501
RESET
IC6301
PST596JNR
XOE
XCE
XWE
XRESET
IC6302
RFKFCV62D080
8M FLASH ROM
IC4061
C0JBAF000367
D FLIP-FLOP GATE
PR
CK
Q
O
IC4051
C0JBAA000260
AND GATE
B1
NWEL
NTISCS
NRE
SBT1
C
RS
HDS1
NRE
NWEL
NRST
NRST
NWEL


GAINH/L
LDCUR
IC2001
MN677203NP1
NODC
37 LDIN
12 SPPOL_GIO3_SPOPC
47,49 ARF,NARF
31 TE
4 TBAL
30 FE
1 FBAL
35 RFENV
32 AS
17 BDO
16 OFTR
88 NRST
82 NINT
21 STDI
20 SCK
18 SEN
83 WAIT
91 BRK
73 NWR
105 AISC
95~97, 100~104 D01~7
72 NRD
71 NCS
85 X1
IC2061
C3ABKG000057
4M DRAM
CASH 124 30
DRAMWE 125 15
RAS 123 16
31
2~5, 7~10, 35~38, 40~43
18~21, 24~28
CASL 126
DRAMD0~15 127~128, 131~144
DRAMA0~8 111~119
IC6251
C0DBCGE00002
REGULATOR
8 VCC
TVDP_TVD1 9 26 TRIN
FDDP_FD0, TRDP_TRD 7,5 3,2 VIN2,VIN1
SPOUT_SPD 11 23 VIN3
TRDM_GIO2 8 27 MUTE3
FDDM_GIO1 6 9 MUTE12
NHSTRB, NOSTRB 92,93
CPUD0~7 74~81
CPUA0~17 53~70
IC2501
C0GBG0000033
MOTOR DRIVE
VO3- 18
VO3+ 17
VO4- 16
VO4+ 15
STEPPING MOTOR UNIT
STEPPING MOTOR
M2501
M2502
VO2+ 12
VO2- 11
VO1+ 14
VO1- 13
OPTICAL PICK UP UNIT
ACTUATOR
FOCUS COIL
TRACKING COIL
ACT F+
ACT F-
ACT T+
ACT T-
IC4031
C0JBAR000294
SELECTOR MULTIPLIER
1 A/B
2 1A
3 1B
4 1Y
5 2A
6 2B
7 2Y
4A 14
4B 13
4Y 12
3A 11
3B 10
3Y 9
IC4201
C0FBBK000030
2CH D/A CONVERTER
11 ZEROR
13 MDI
15 ML
16 SCK
BCK 1
DATA 2
LRCK 3
VOUTL(R) 7(8)
MD 14
D
AVTRM
STD
NRE
NODCCS
CLK16M
C
B1
ST
ZFLAG
SBO1
STBDAC
EXTCLK


IC3061
C3ABMG000103
16M
SDRAM
IC3001
MN677533MP
AV DECODER
CDET
CB
CR/R
Y
119 VBOUT
124 VGOUT
129 VCOUT
134 VYOUT
2~4,6~8,10,12,201
204,203,206~207
158~207
B
TO MAIN
BLOCK
IC6303
C3EBFC000030
8K
EEPROM
6
5
SCLOCK
SDATA
IC4021
C0CBCAC00025
VOLTAGE
REGULATOR
4
1
2
IC4001
TMS320C5410A
WMA DECODING LSI
62 HRIL
49 BCLKX2
48 BCLKX0
42,44,47 BCLKR2, BFSR2, BRD2
27 XE
18 HR/W
17 HCS
5,7~11, 105,107, 131~141 A0~17
INT1 65
BFSX0 53
BFSX2 54
BDX2 60
BDX1 74
CLKIN 97
RS 98
D0~15 99~104, 113~123
HDS1 127
ST 71,72 VRQ, VSTR
AVTRM 73 AVTRM
STD 75~78, 80~83 STD0~7
SRCK 90 SRCK
AOUT0 92 ADOUT0
BDX1
AUDIOD
IECSEL
NWEL 30 XWR
NRE 31 XRD
SRCK
C 35~38, 40~43, 45~47, HA1~11
BFSX2
B 27,32 XHINT, XCS
LRCK
BCLKX2
B1 49~51, 54~57, 59~62, 64~67,69 HD0~15
D 70 AUDSTR
AUDIOD 85 IECOUT
LRCK 89 LRCK
BDX2
AOUT0
AUDIODIGITAL
CLK27M 99 CLK27
EXTCK 110
LVDD 12
IC6222
C0JBAA000001
INVERTER
STAT
IC6221
C0JBAA000001
INVERTER
DSPCLK
AUDIODIGITAL
AMUTE
CMD
WIDE1
TO MAIN
BLOCK
D
MIXL(R)
SBT1
IC4041
C0JBAA000260
AND GATE
4
1
2
RS
DSPRST
NRST
EXTCLK
BCLKX2
SBT1
STD
TINT
NWEL
NTIPCS
C
HDS1
B1
RS
CLK16M
BDX1
BDX2
BFSX2
NTISCS
STATUS
DAC2
AUDIODIGITAL
AMUTE
CMD
WIDE1


D
TO DVD BLOCK
JK4401
AUDIODIGITAL
PWRMUTE
AMUTE
ZFLAG
MIXL(R)
WIDE_1
PWRMUTE
DSPCLK
STAT
CMD
Q4402
SWITCH
QR4401
SWITCH
QR4403
SWITCH
QR4404
SWITCH
Q4431(Q4441)
MUTING SWITCH
IC4311
C0ABBB000118
OP AMP
IC4391
C0ABBB000118
OP AMP
Q4411 (Q4421)
MUTING SWITCH
Q4445
MUTING SWITCH
F-LCH
MIXL
JK4401
IC501
BA6247N
MOTOR DRIVE
+B
+B
AMP
DRIVE
DIRECTION SELECT
M501
M551
QR6062
SWITCHING
1 CMD
2 STAT
3 DSPCLK
31 POWERMUTE
32 WIDE_1
27 TURN
28 DIR
25 P07
IC6001
MN101C35DCN
MICON
9 OSC2
10 OSC1
X6001
16~18 KEYIN0~KEYIN2
KEY SWITCH

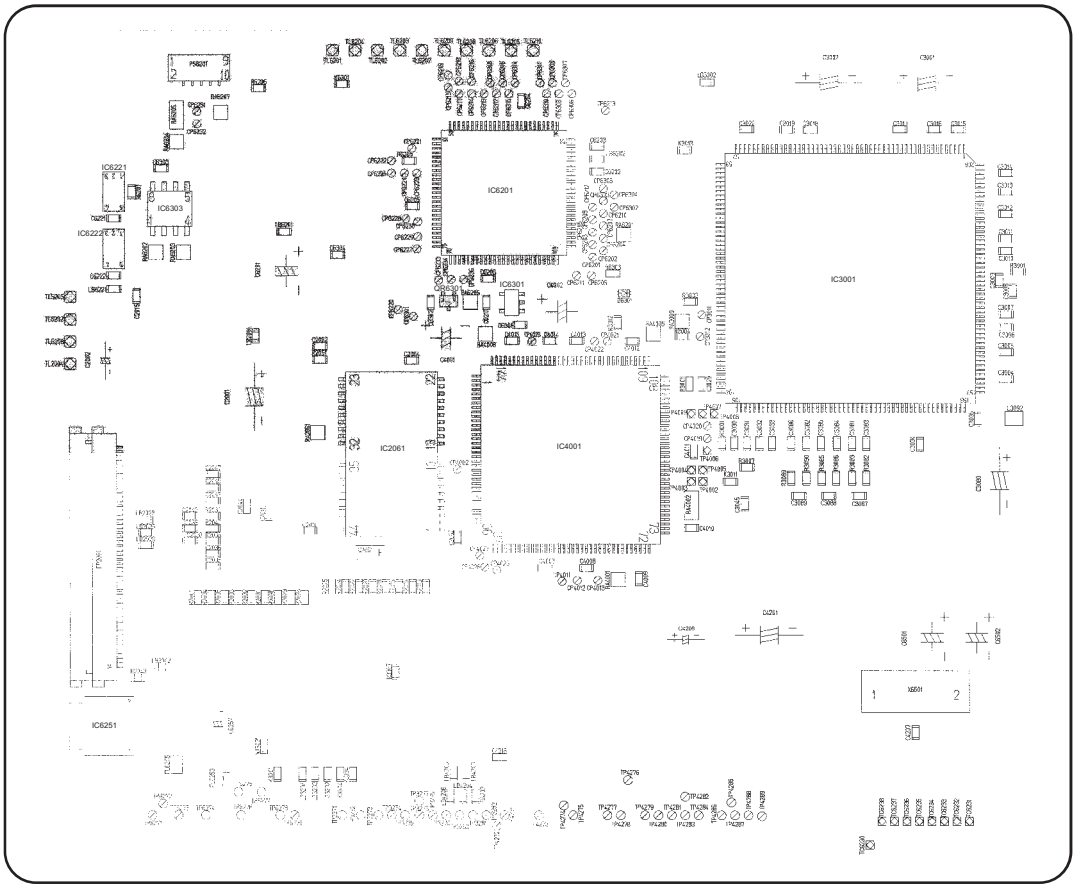

IC3501
C9ZB00000394
VIDEO BUFFER
TO DVD BLOCK
B
JK4401 VOUT
MIXOUT1
MIXOUT2
COUT
QR3521
INVERTER
CIN
YIN
CBIN
CRIN
CROUT
CBOUT
CDET
Y
CB
CR/R
PR
PB
JK4401
YOUT1
PYOUT1
JK4401 Y
JK4401 S2-VIDEO
QR6061
SWITCHING
Q6401,Q6402
LED DRIVE
S551
PWM
CDSEQ_LED
ASRQ_LED
AONLY_LED
PSRQ_LED
VIDEO1
R-Q
IC6001
MN101C35DCN
MICON
POSITION
UDW
SPEED
+B
Q501
D501
D551
D502


SIGNAL LINES
MAIN SIGNAL LINE
DVD VIDEO SIGNAL LINE
DVD AUDIO SIGNAL LINE
( ) indicates Pin No. of Right Channel
T1021
TO FL DISPLAY
IC1151
C0CBCHG00003
REGULATOR
IC4312
C0CAADC00013
AC TO DC CONVERTER
Q1126
REGULATOR
Q1125
SWITCH
QR1115
SWITCH
Q1115
REGULATOR SWITCH
Q1165
REGULATOR
+B
-B
POWER TRANSFORMER
Q1021
SWITCH
D1011
L1001
P1001
F1001
Q1052
VOLTAGE CONTROL SWITCH
Q1051
PHOTO COUPLER
IC1101
C0DAEMZ00001
VOLTAGE REGULATOR
IC6011
C0EBE0000106
RESET
IC6401
B3RAB0000013
REMOTE RECEIVER
26
/RST
33
REMOCON
IC6001
MN101C35DCN
MICON
DGT14
50
DGT1-DGT9
55-63
SEG7-SEG21
64-78
Q6091
SWITCH
FL 901
FL DISPLAY
FROM POWER TRANSFORMER

A B C D E F G

1 2 3 4 5 6 7 8 9

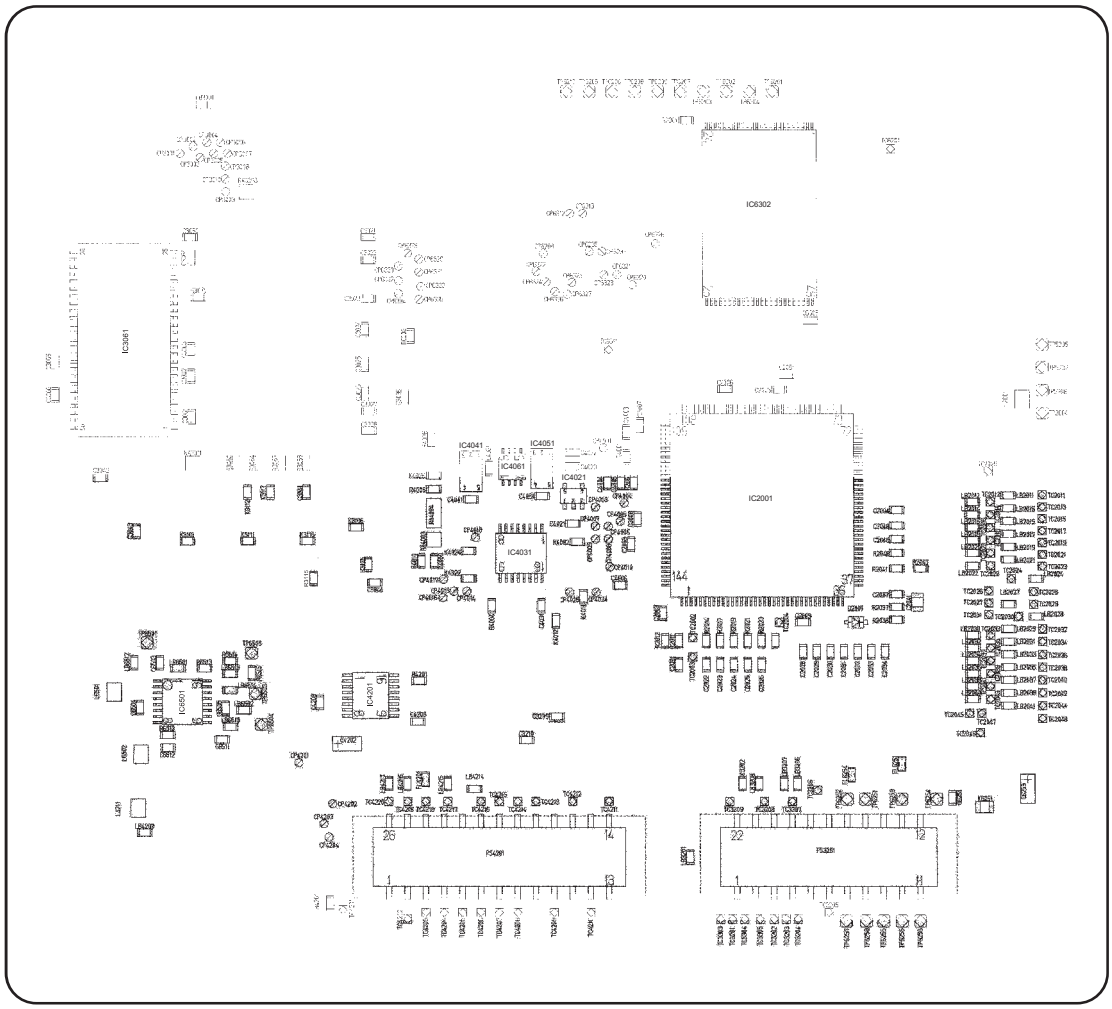
B DVD B/E MODULE (1/2) P.C.B. (REP3303S)



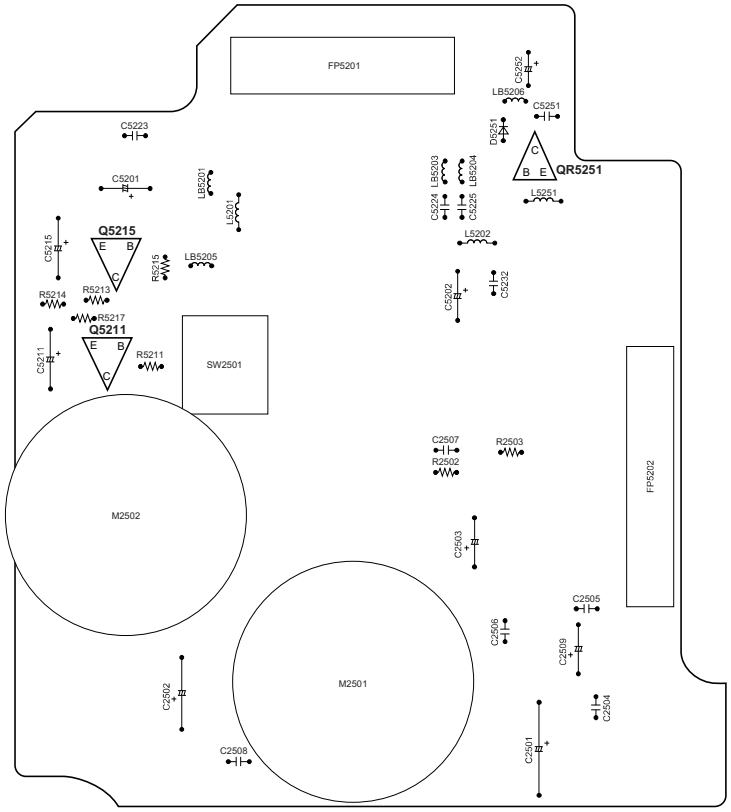
A B C D E F G

1 2 3 4 5 6 7 8 9

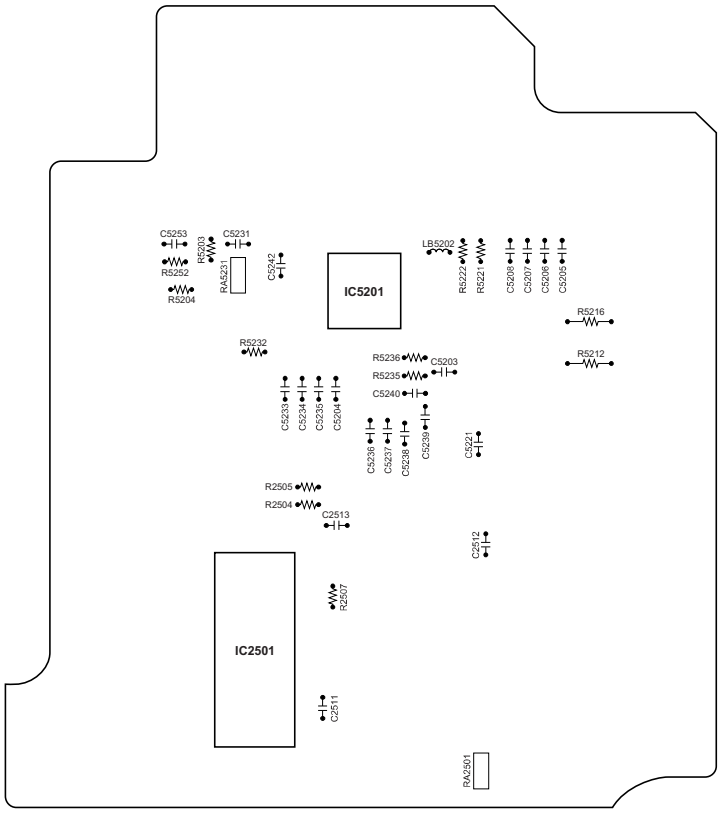
B DVD B/E MODULE (2/2) P.C.B. (REP3303S)



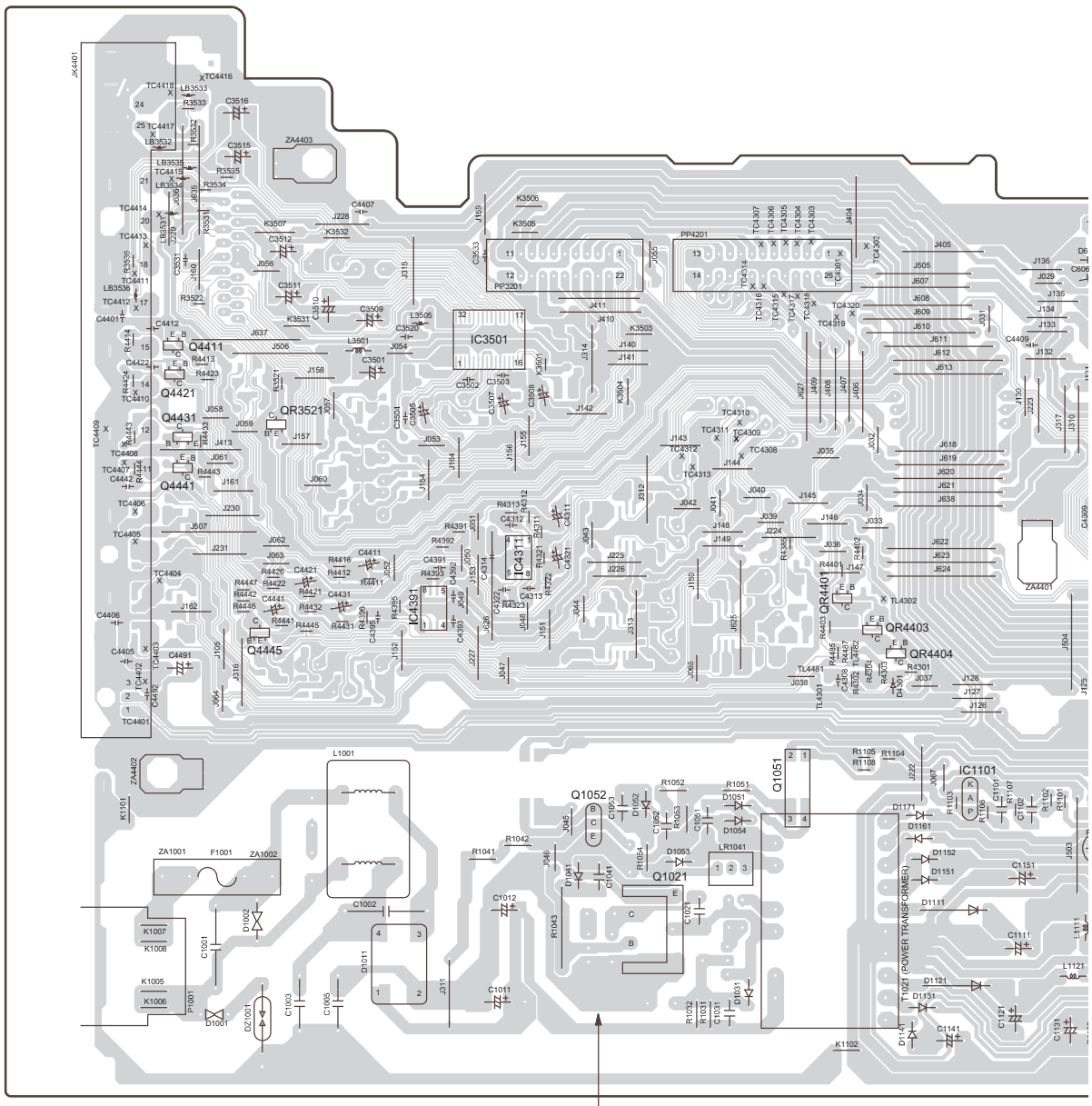
A DVD FRONTEND MODULE (1/2) P.C.B (REP3091A-N)



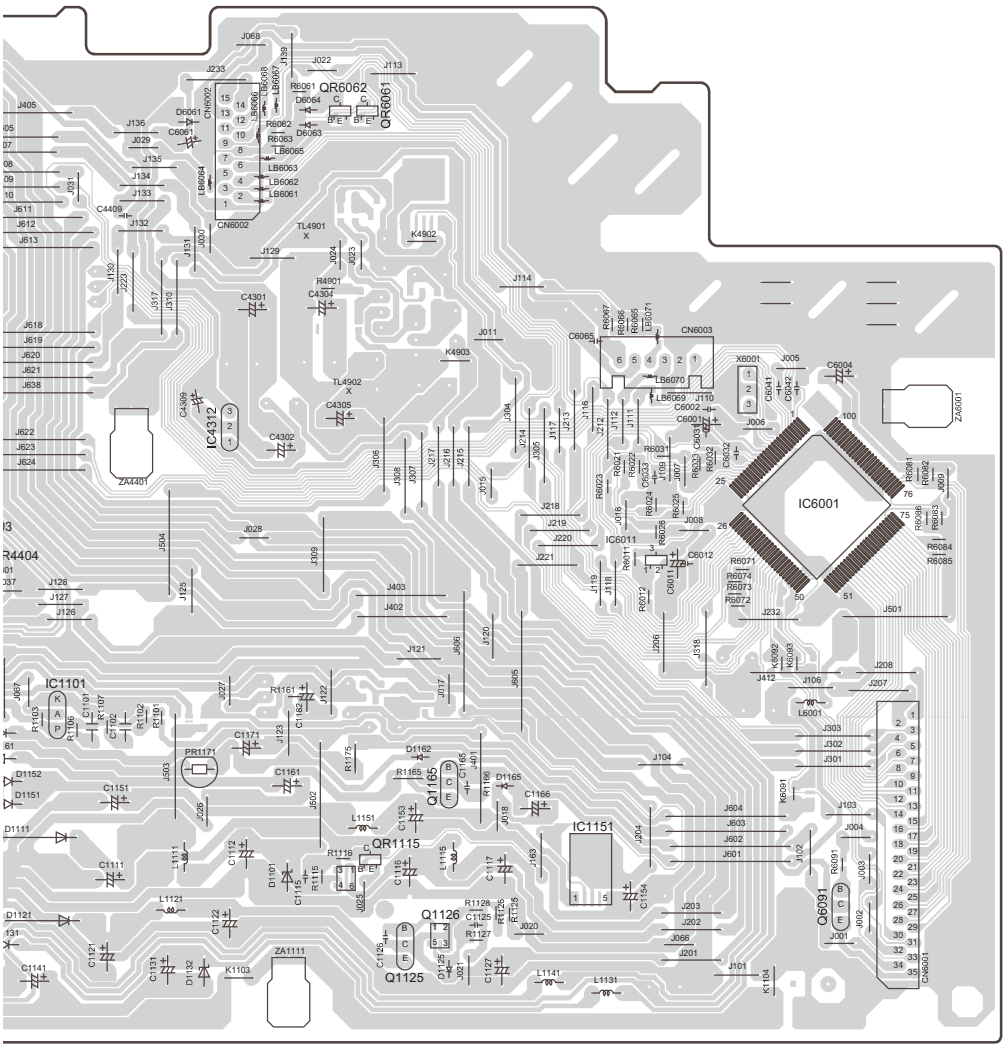
A DVD FRONTEND MODULE (2/2) P.C.B (REP3091A-N)



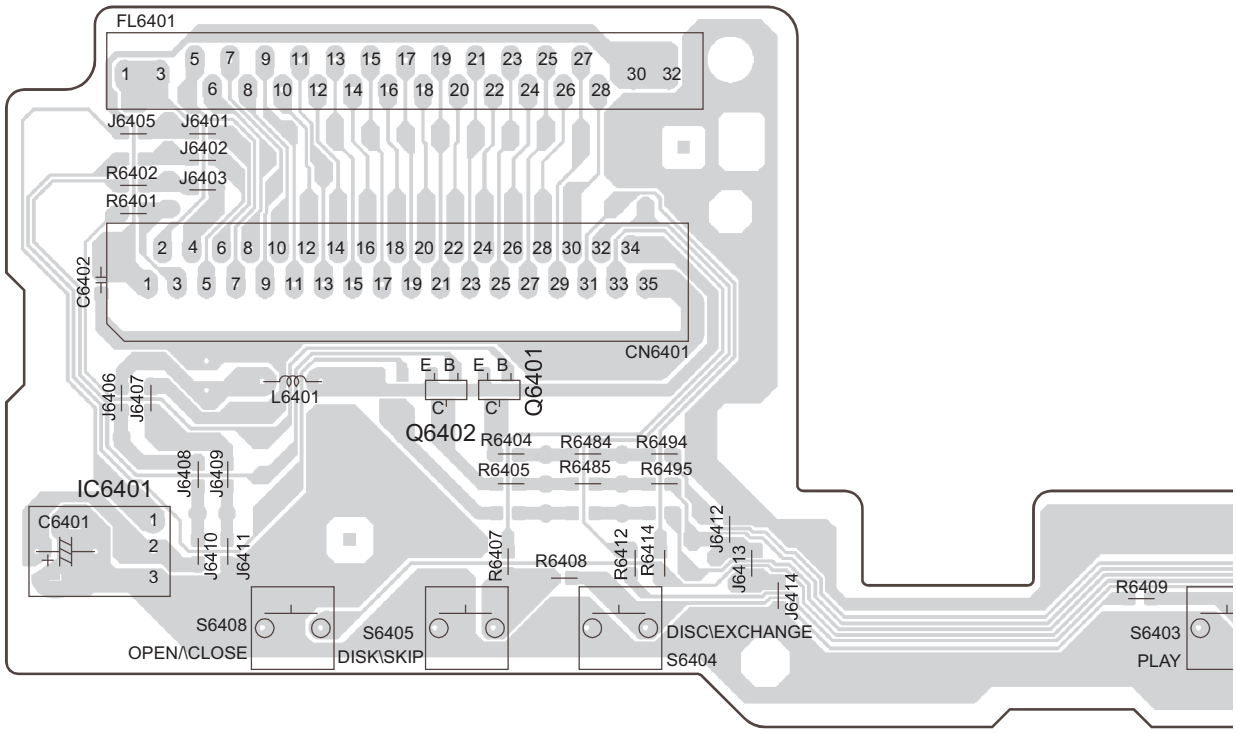
C MAIN P.C.B. (REP3319D)



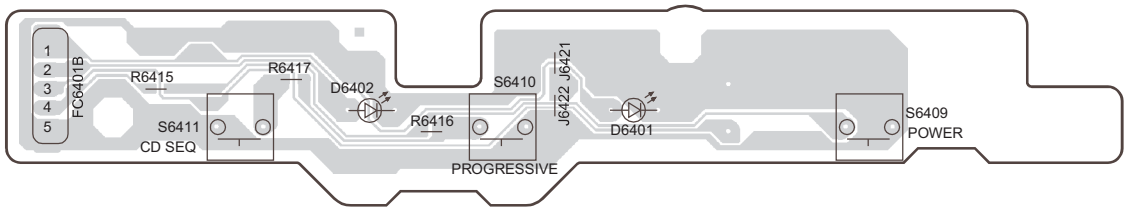
G H I J K L M

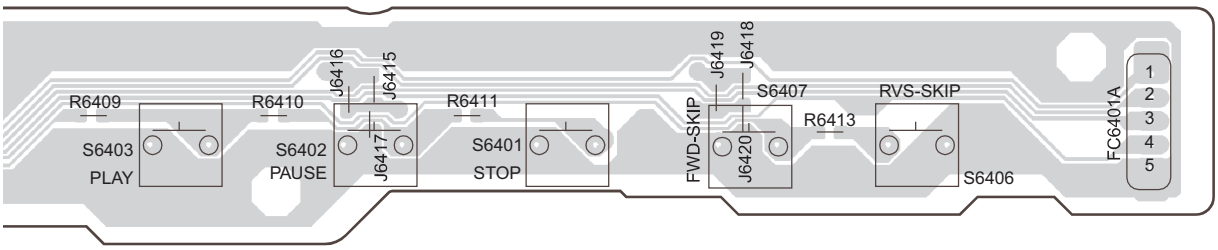

IC1101
IC4312
IC6001
IC6011
IC1151
Q1165
Q1126
Q1125
Q6091
QR6062
QR6061
QR1115
PR1171
ZA4401
ZA1111
ZA6001
CN6002
CN6003
CN6001
TL4901
TL4902
K4902
K4903
K1103
K1104
X6001
L6001
L1151
L1121
L1141
L1131

D PANEL P.C.B. (REP3320A)



E POWER SWITCH P.C.B. (REP3320A)

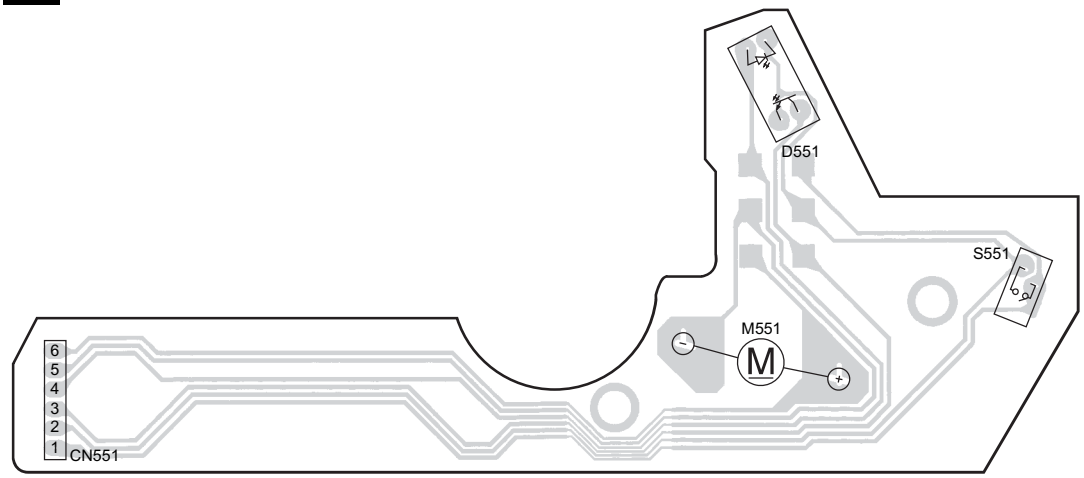



R6409
S6403
PLAY
R6410
J6416
J6415
S6402
PAUSE
J6417
R6411
S6401
STOP
J6419
J6418
S6407
FWD-SKIP
J6420
R6413
RVS-SKIP
S6406
FC6401A
1
2
3
4
5

A B C D E F G

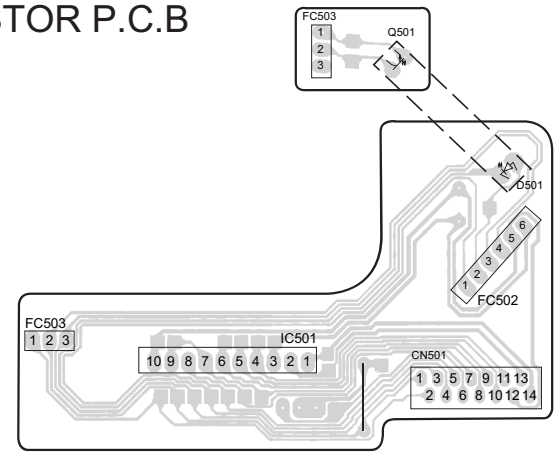
1 2 3 4 5 6 7 8 9

I LOADING MOTOR (REPX0095A-N)

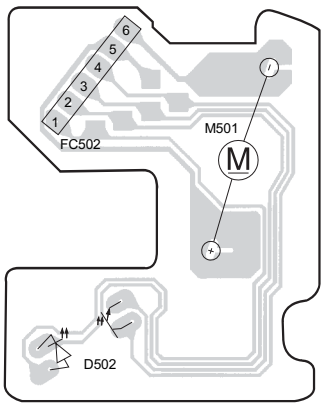


H PHOTO TRANSISTOR P.C.B (REPX0096B-N)

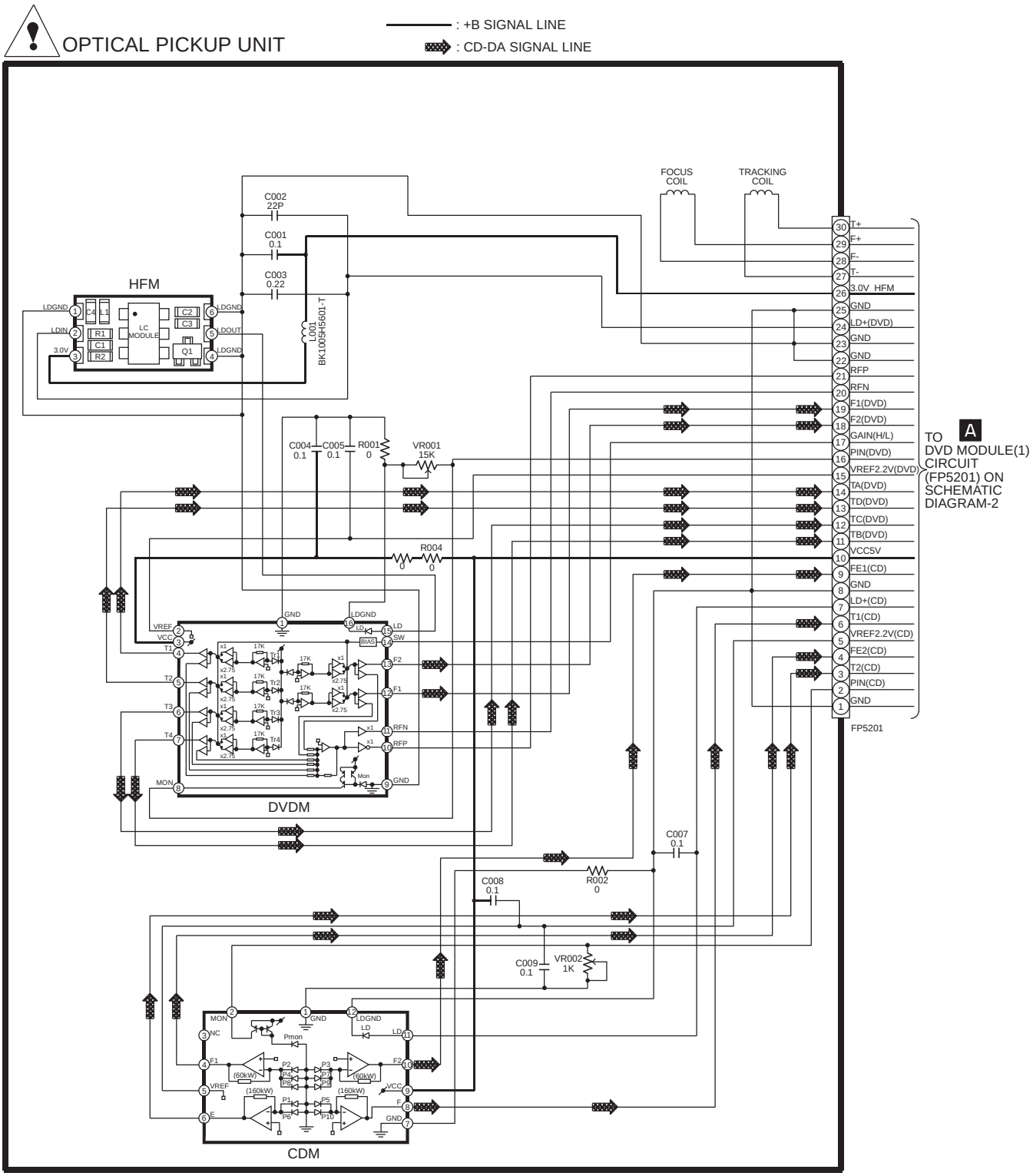
F SENSOR P.C.B (REPX0096B-N)



G TRAY MOTOR P.C.B (REPX0096B-N)



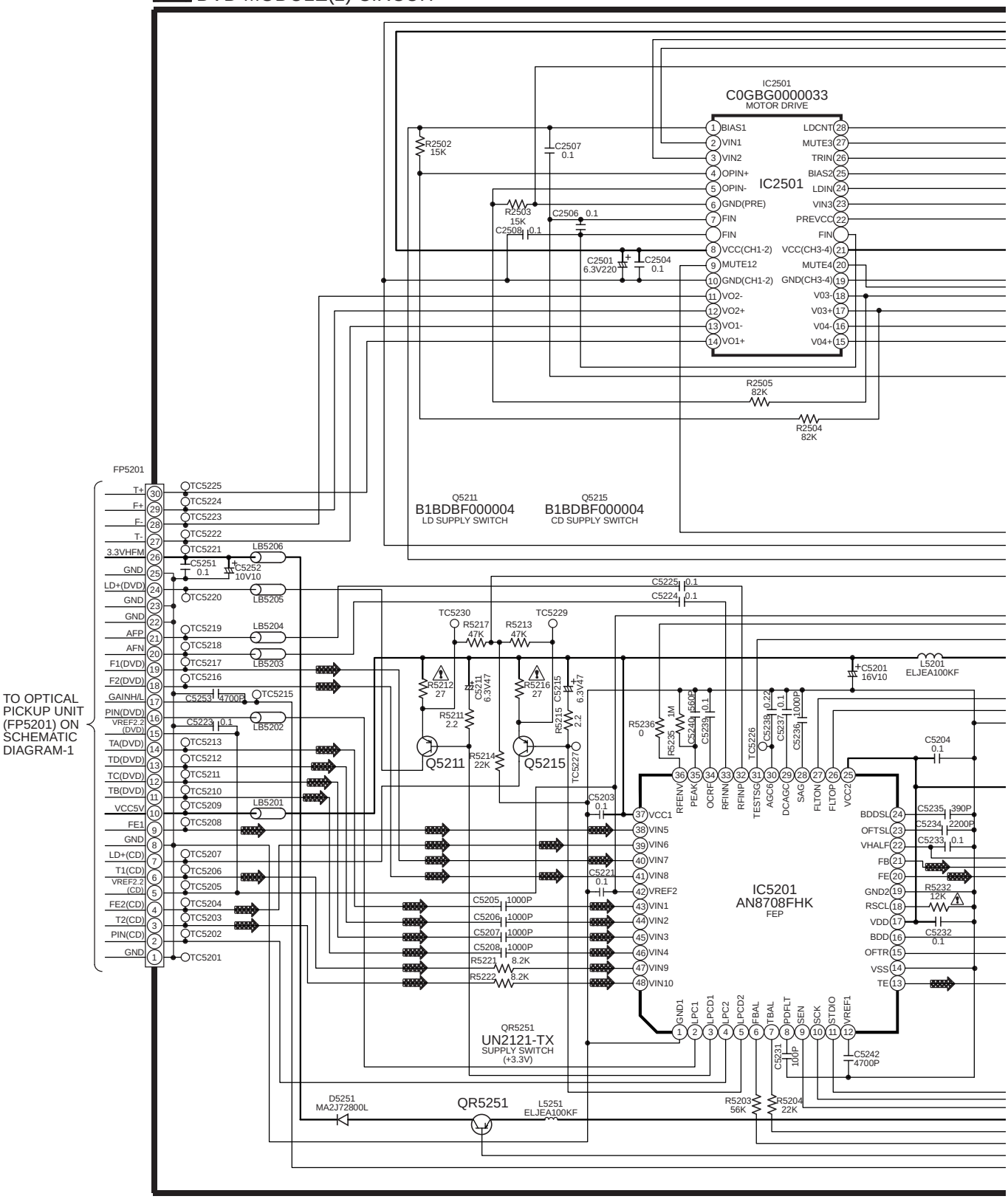
SCHEMATIC DIAGRAM-1



SCHEMATIC DIAGRAM-2

A DVD MODULE(1) CIRCUIT

: +B SIGNAL LINE
: CD-DA SIGNAL LINE

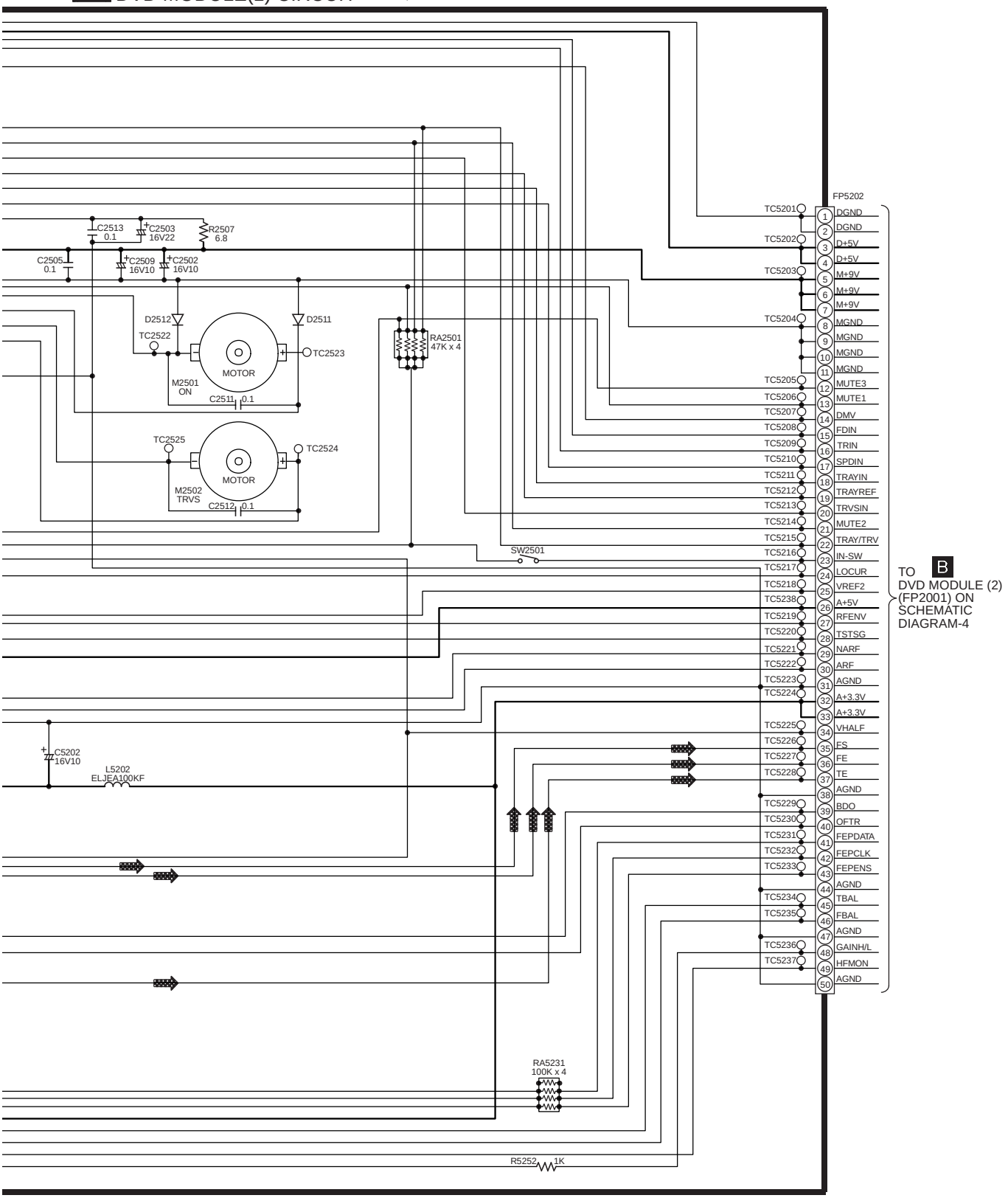


SCHEMATIC DIAGRAM-3

A DVD MODULE(1) CIRCUIT

: +B SIGNAL LINE

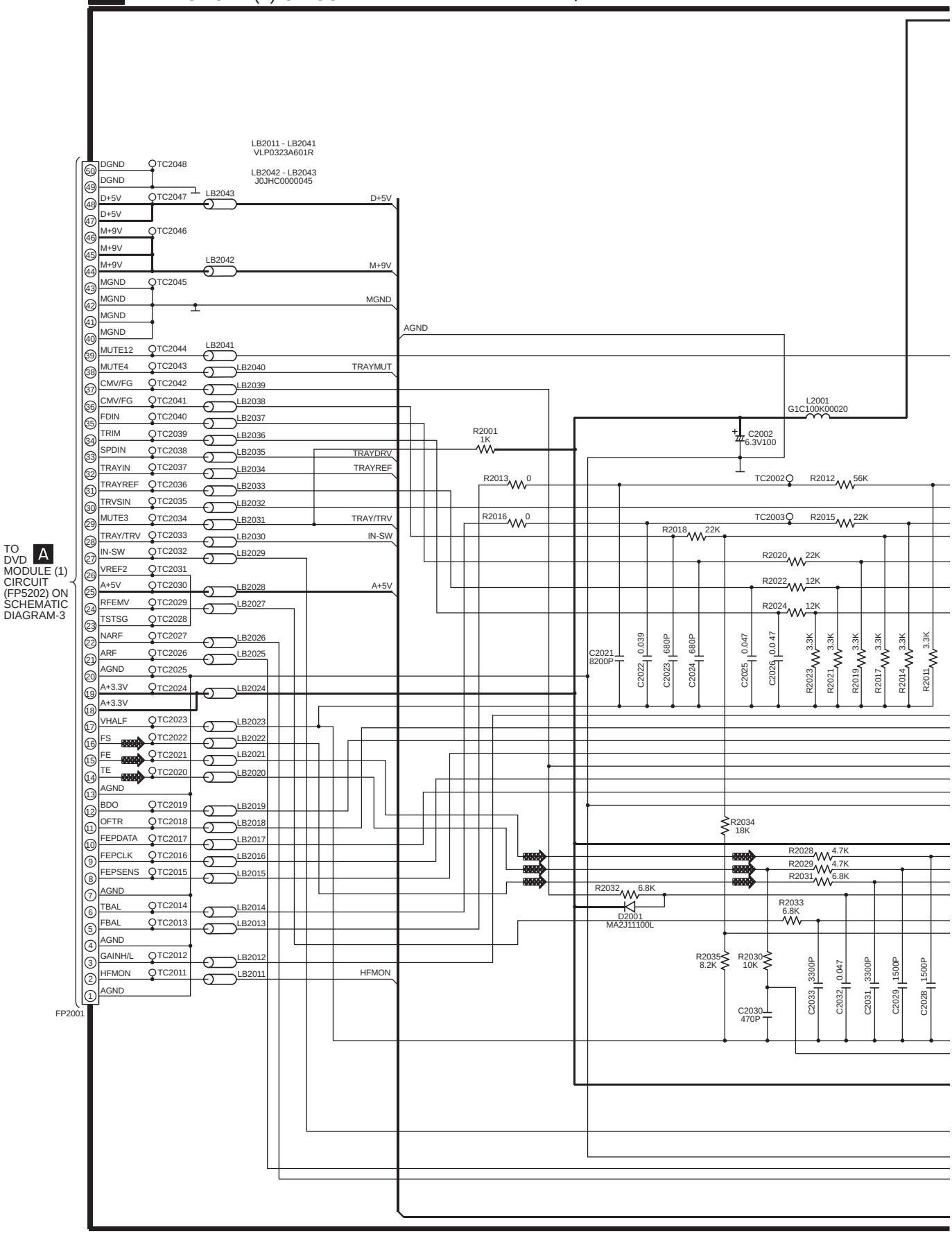
: CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM-4

B DVD MODULE (2) CIRCUIT

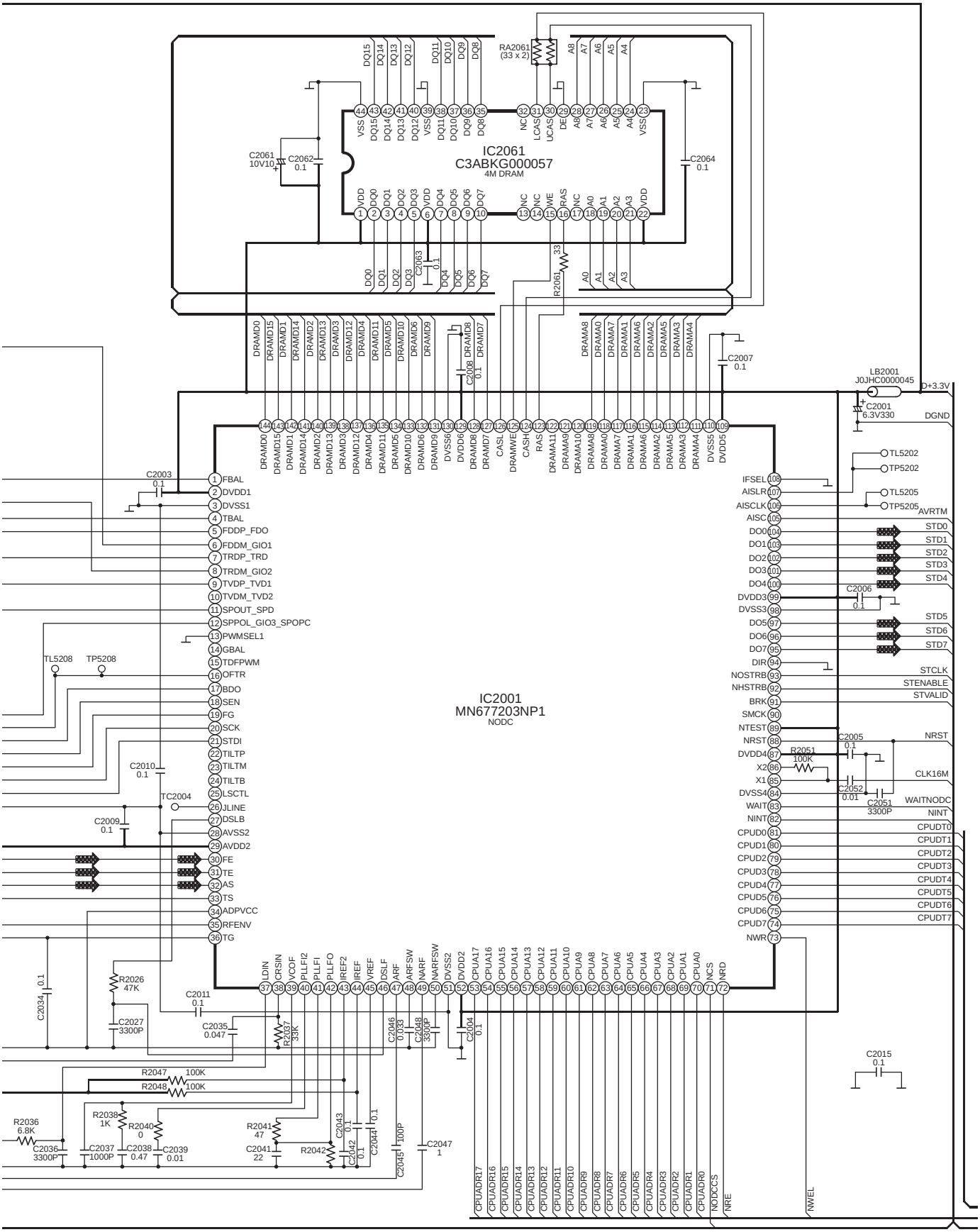
: +B SIGNAL LINE : CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM-5

B DVD MODULE (2) CIRCUIT

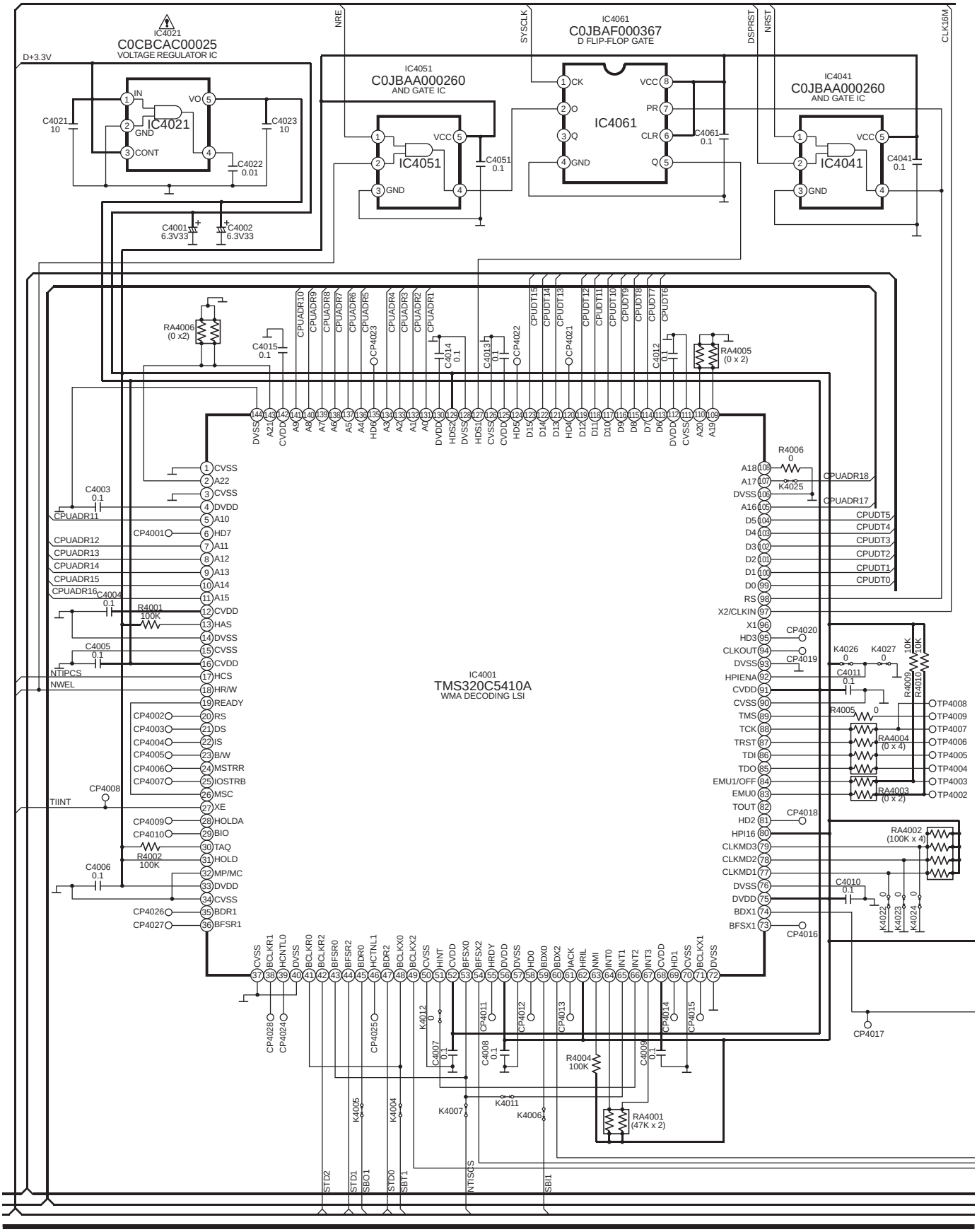
: +B SIGNAL LINE : CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM-6

B DVD MODULE (2) CIRCUIT

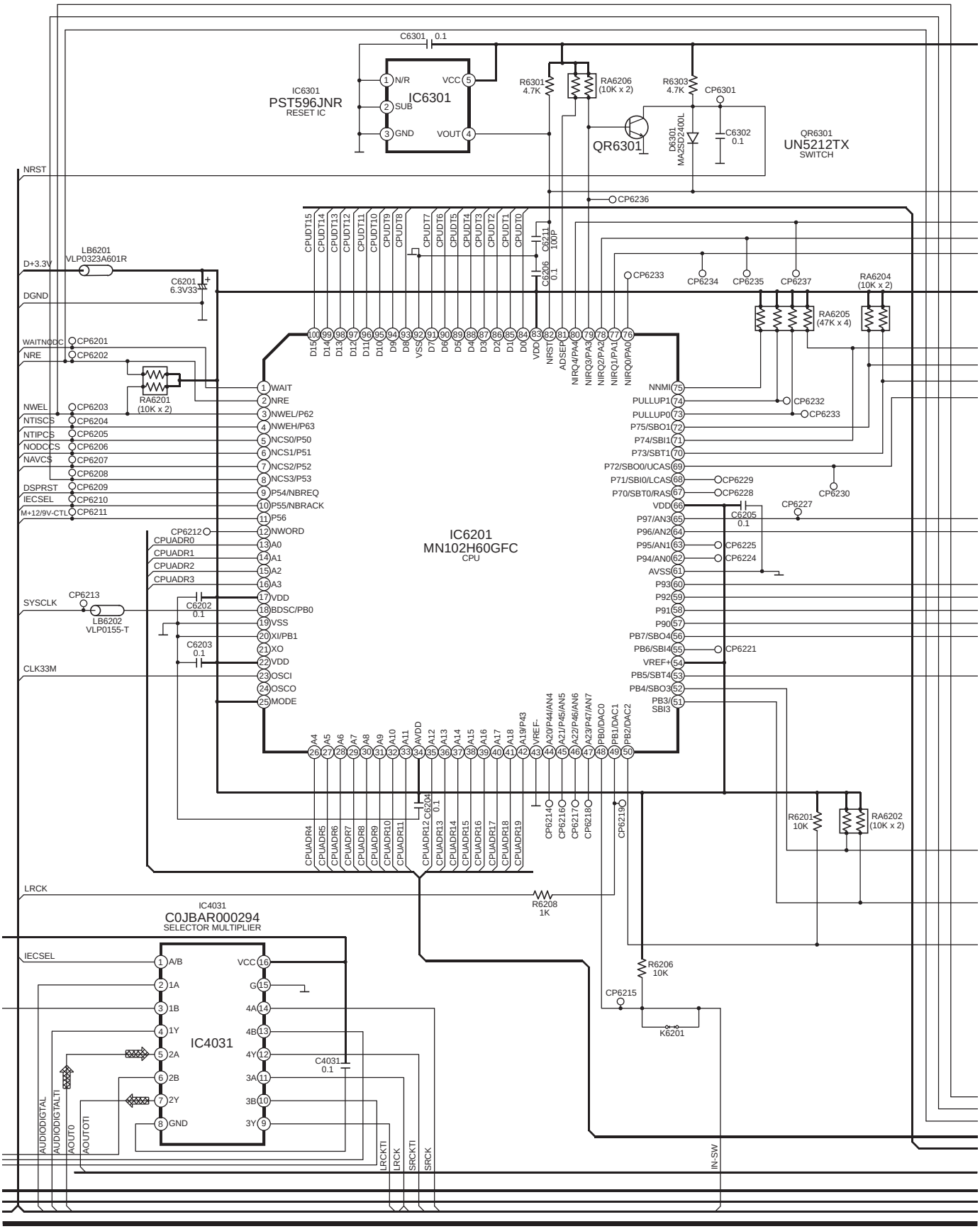
: +B SIGNAL LINE



SCHEMATIC DIAGRAM-7

B DVD MODULE (2) CIRCUIT

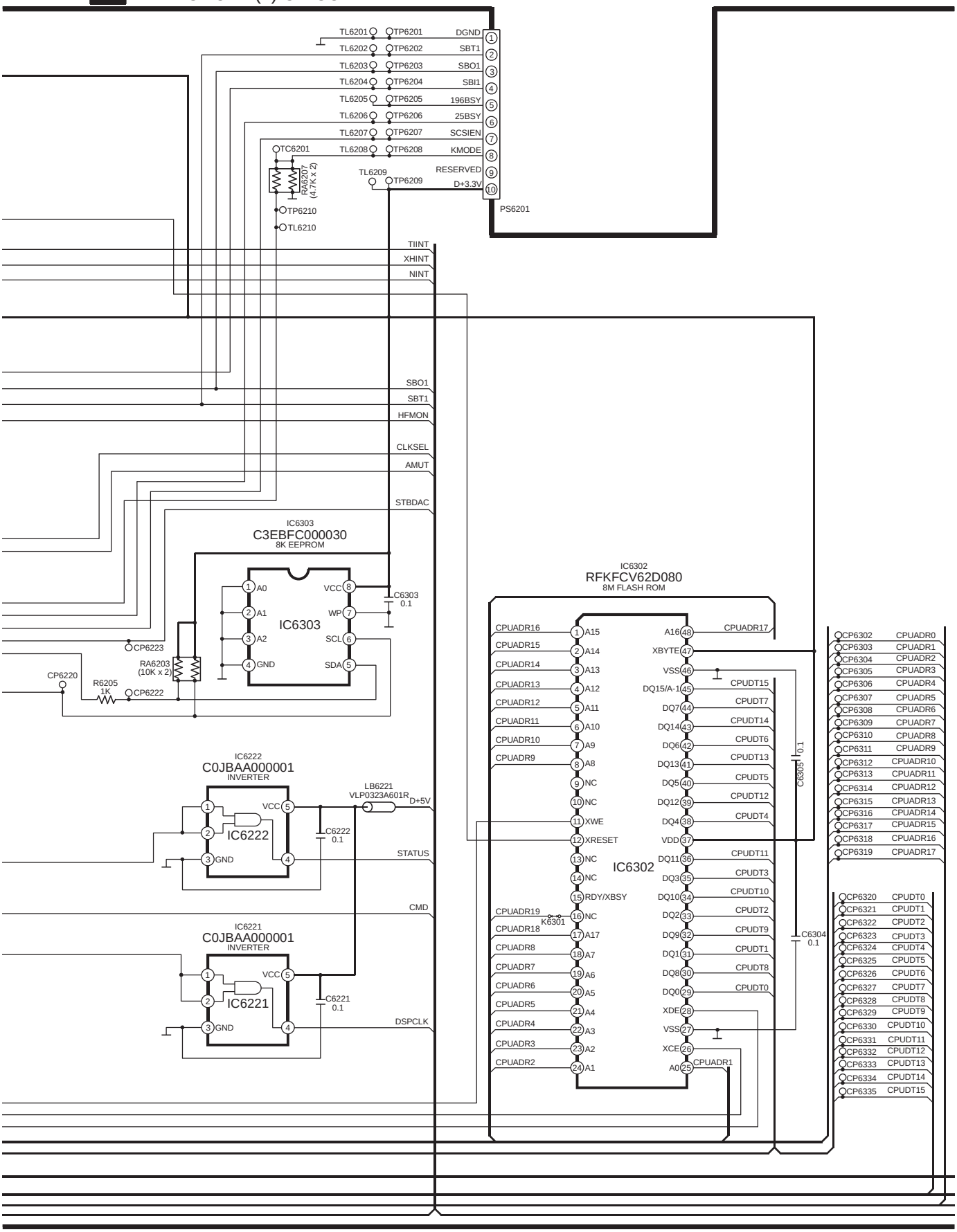
: +B SIGNAL LINE : DVD AUDIO SIGNAL LINE



SCHEMATIC DIAGRAM-8

B DVD MODULE (2) CIRCUIT

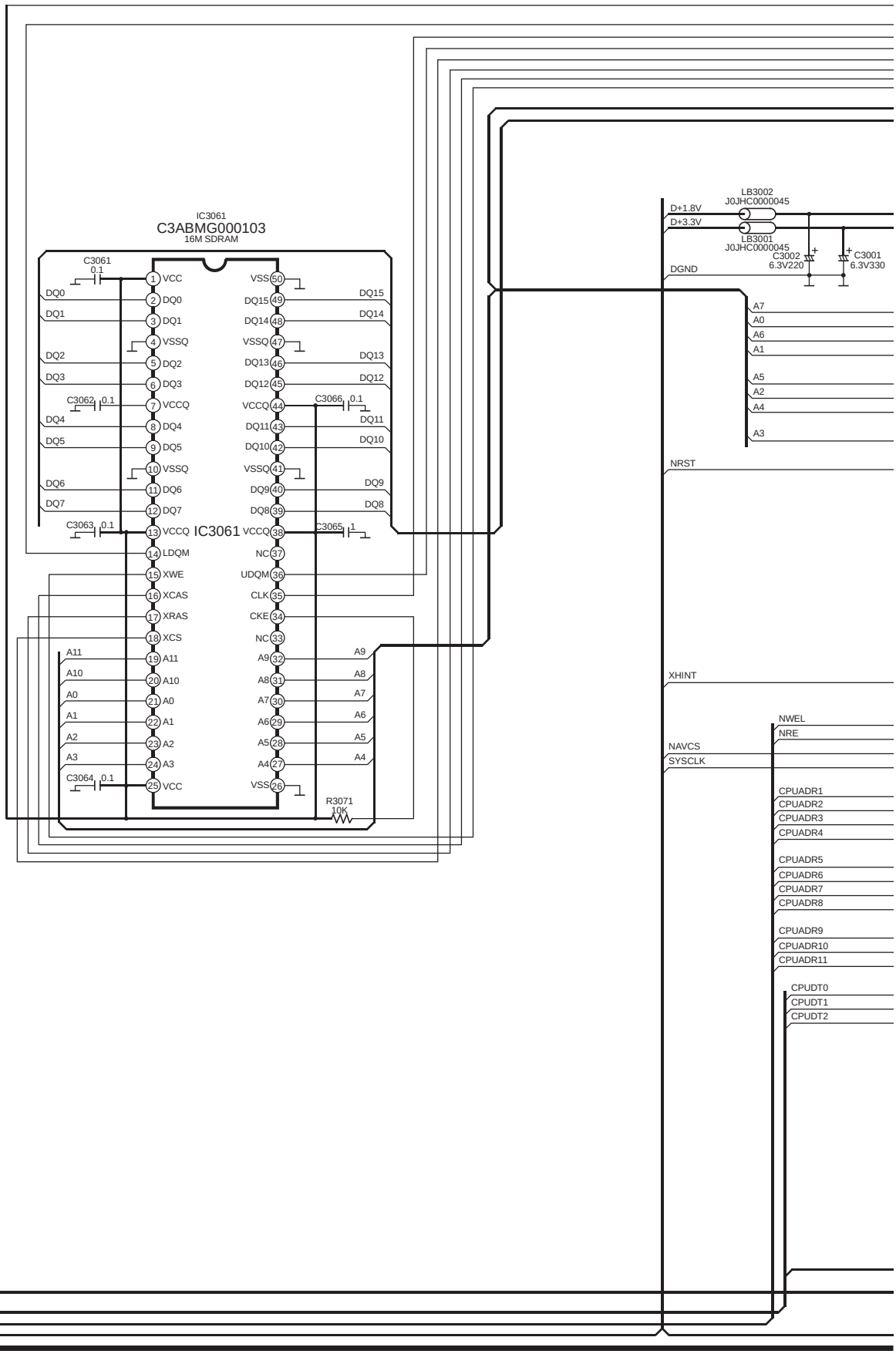
: +B SIGNAL LINE



SCHEMATIC DIAGRAM-9

B DVD MODULE (2) CIRCUIT

: +B SIGNAL LINE



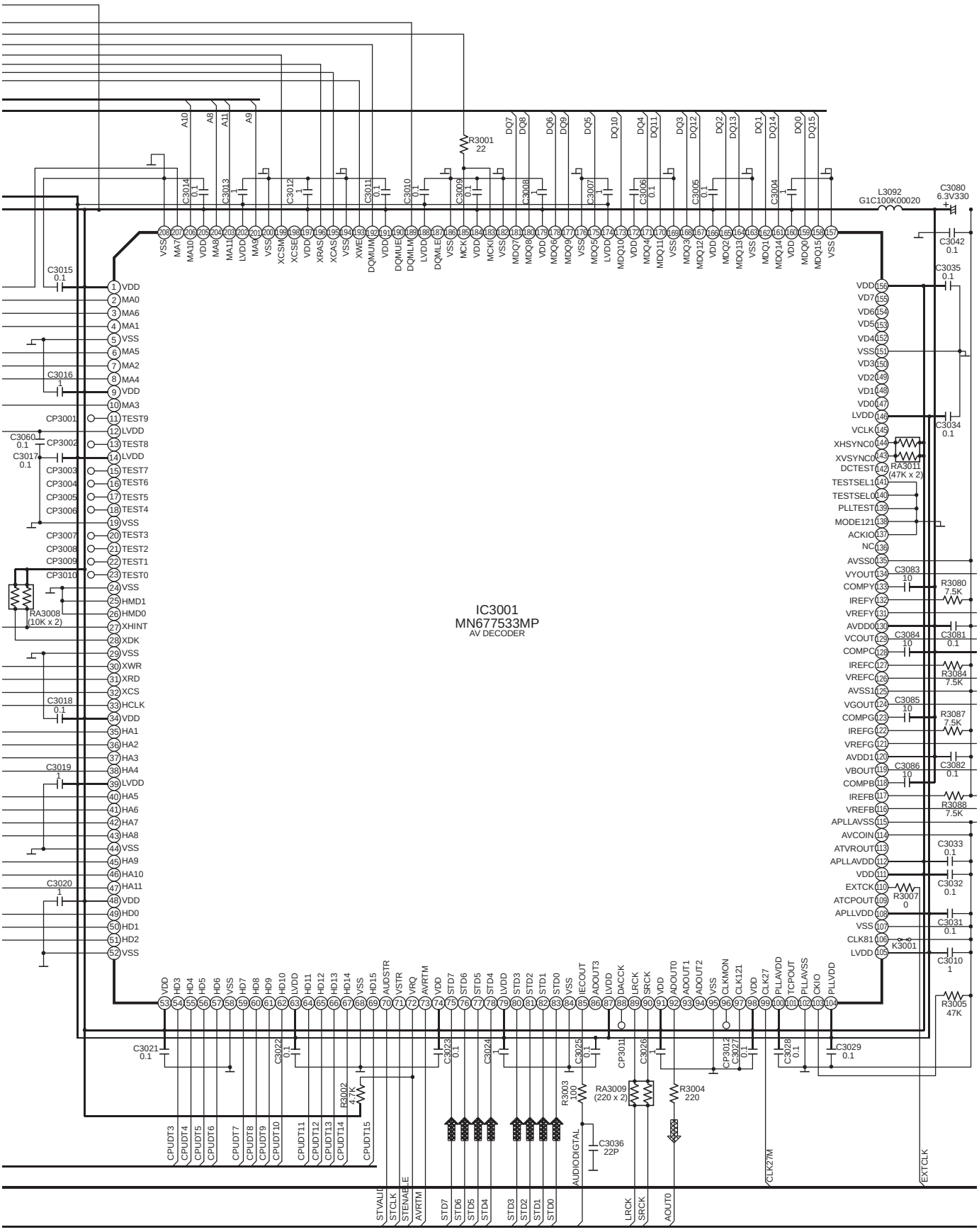
SCHEMATIC DIAGRAM-10

B DVD MODULE (2) CIRCUIT

: +B SIGNAL LINE

: DVD(AUDIO) SIGNAL LINE

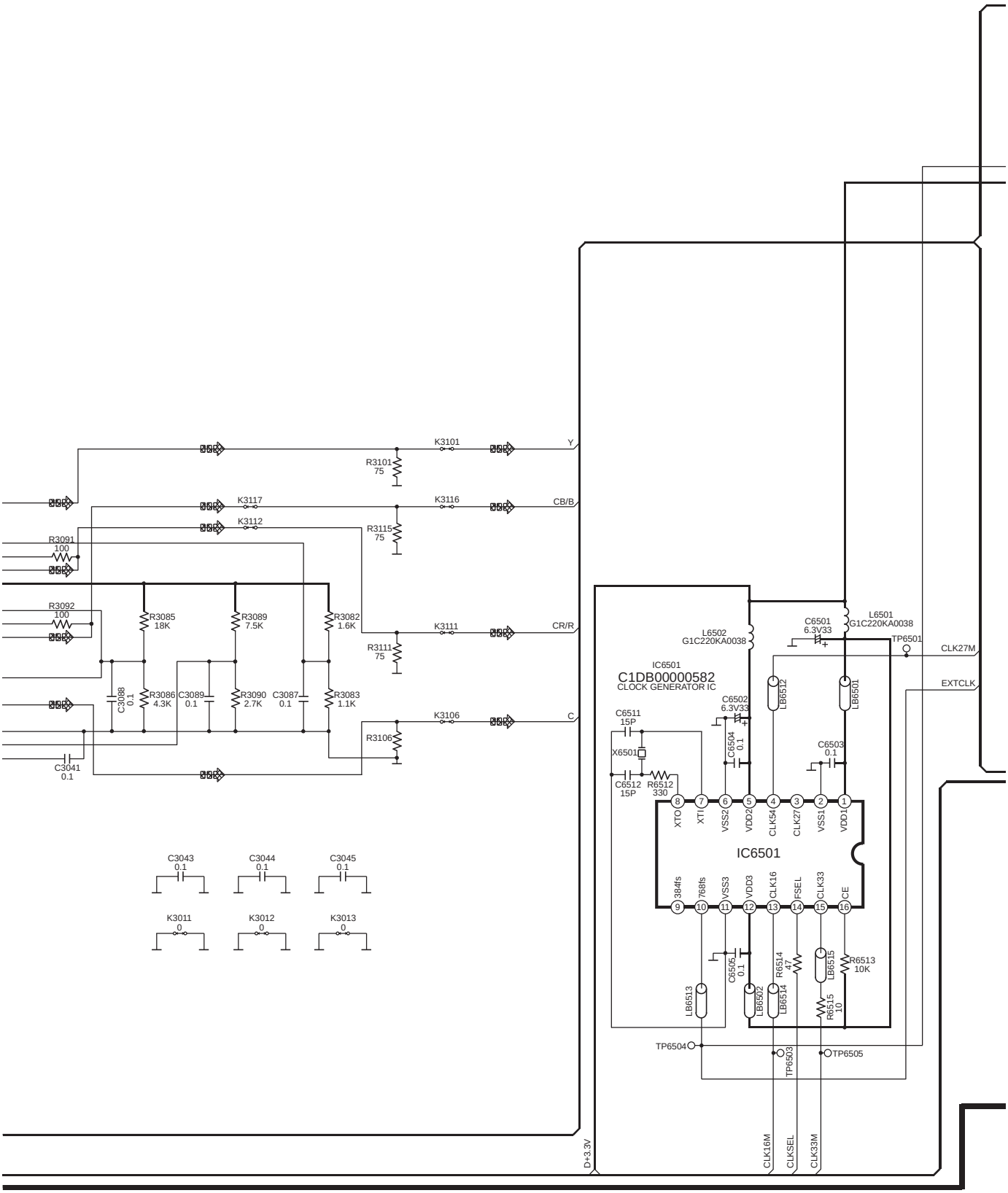
: CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM-11

B DVD MODULE (2) CIRCUIT

: +B SIGNAL LINE : DVD(VIDEO) SIGNAL LINE



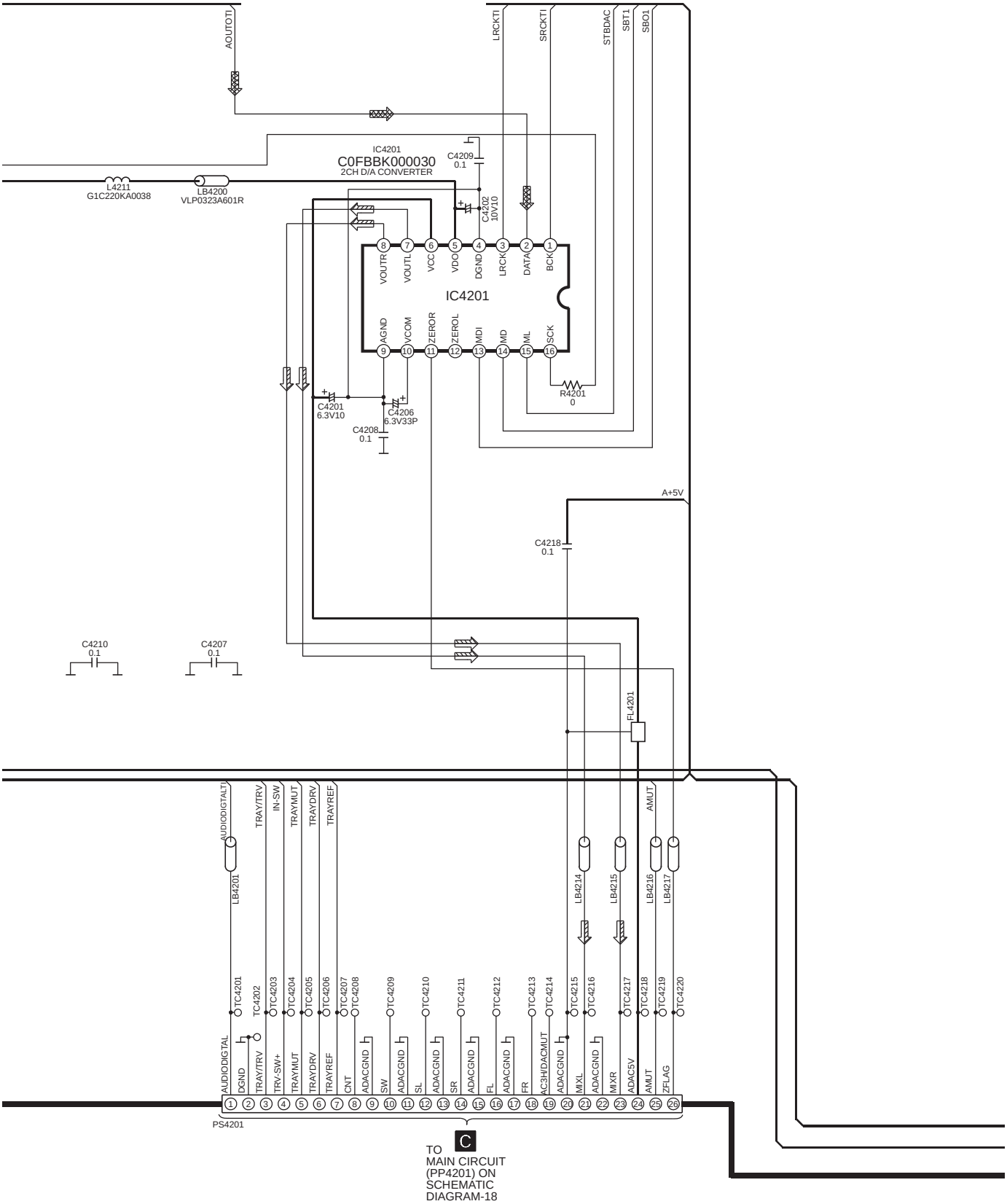
SCHEMATIC DIAGRAM-12

B DVD MODULE (2) CIRCUIT

: +B SIGNAL LINE

: DVD(AUDIO) SIGNAL LINE

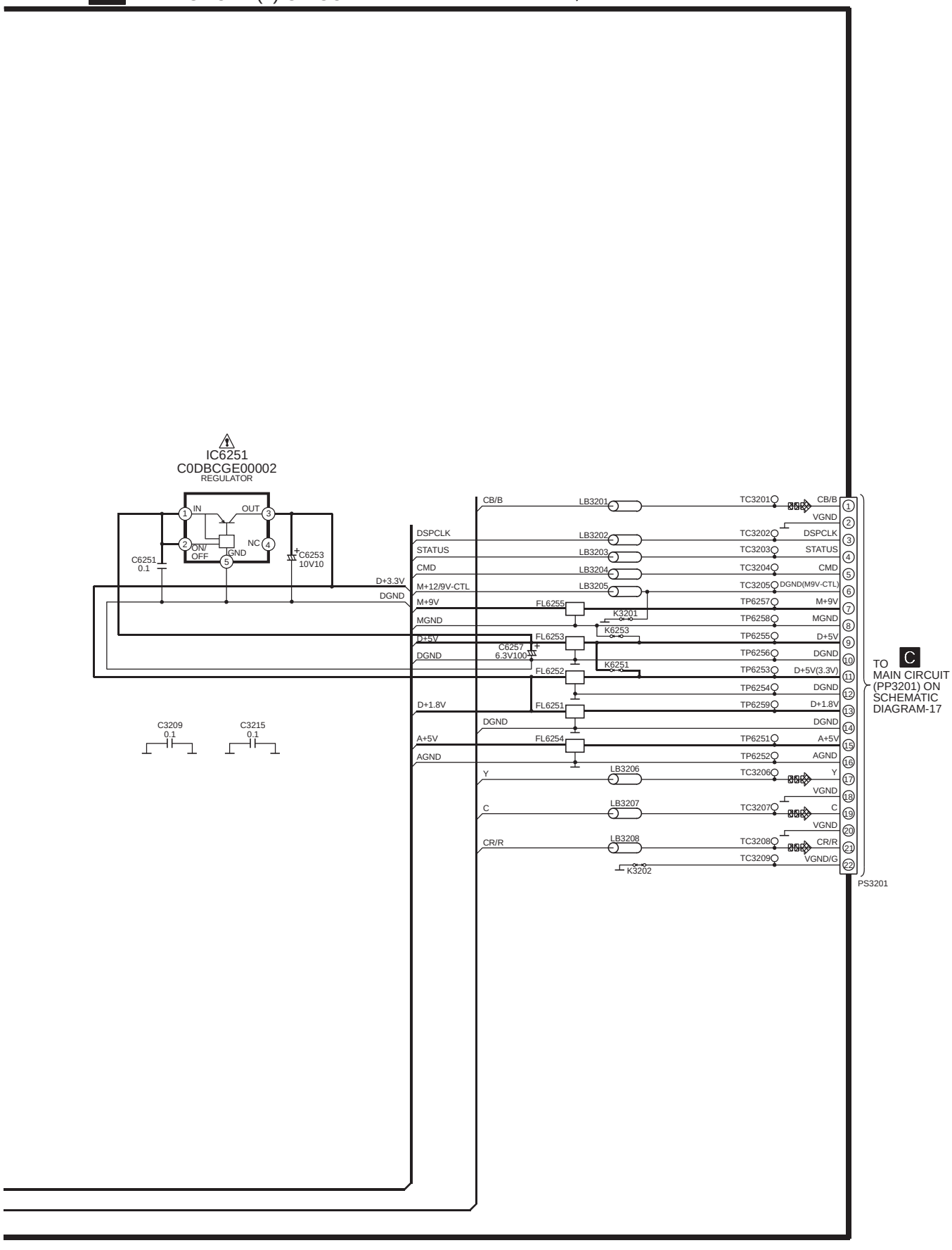
: MAIN SIGNAL LINE



SCHEMATIC DIAGRAM-13

B DVD MODULE (2) CIRCUIT

——— : +B SIGNAL LINE ▨▨▨ : DVD(VIDEO) SIGNAL LINE

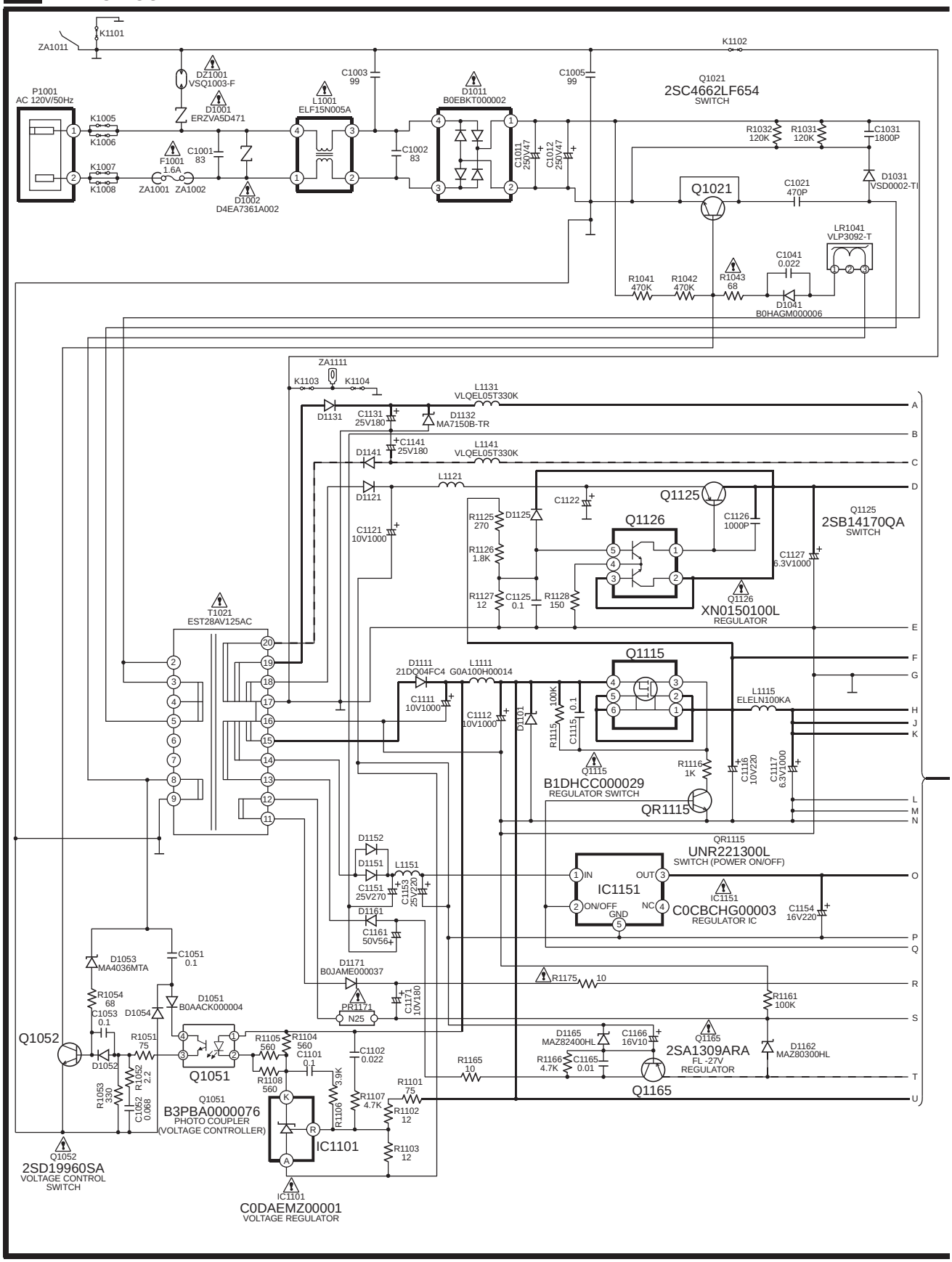


SCHEMATIC DIAGRAM-14

C MAIN CIRCUIT

– – – : -B SIGNAL LINE

——— : +B SIGNAL LINE

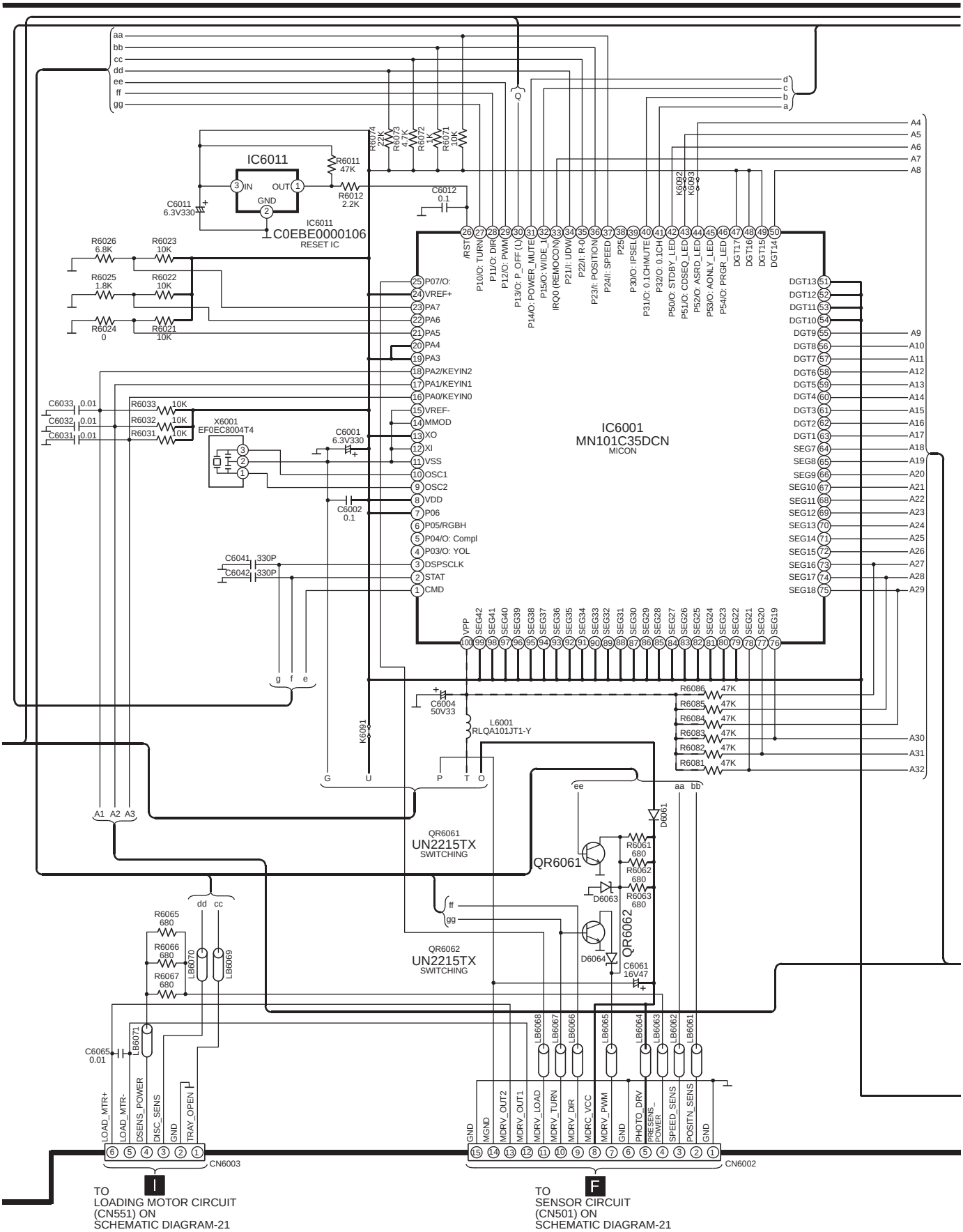


SCHEMATIC DIAGRAM-15

C MAIN CIRCUIT

– – – : -B SIGNAL LINE

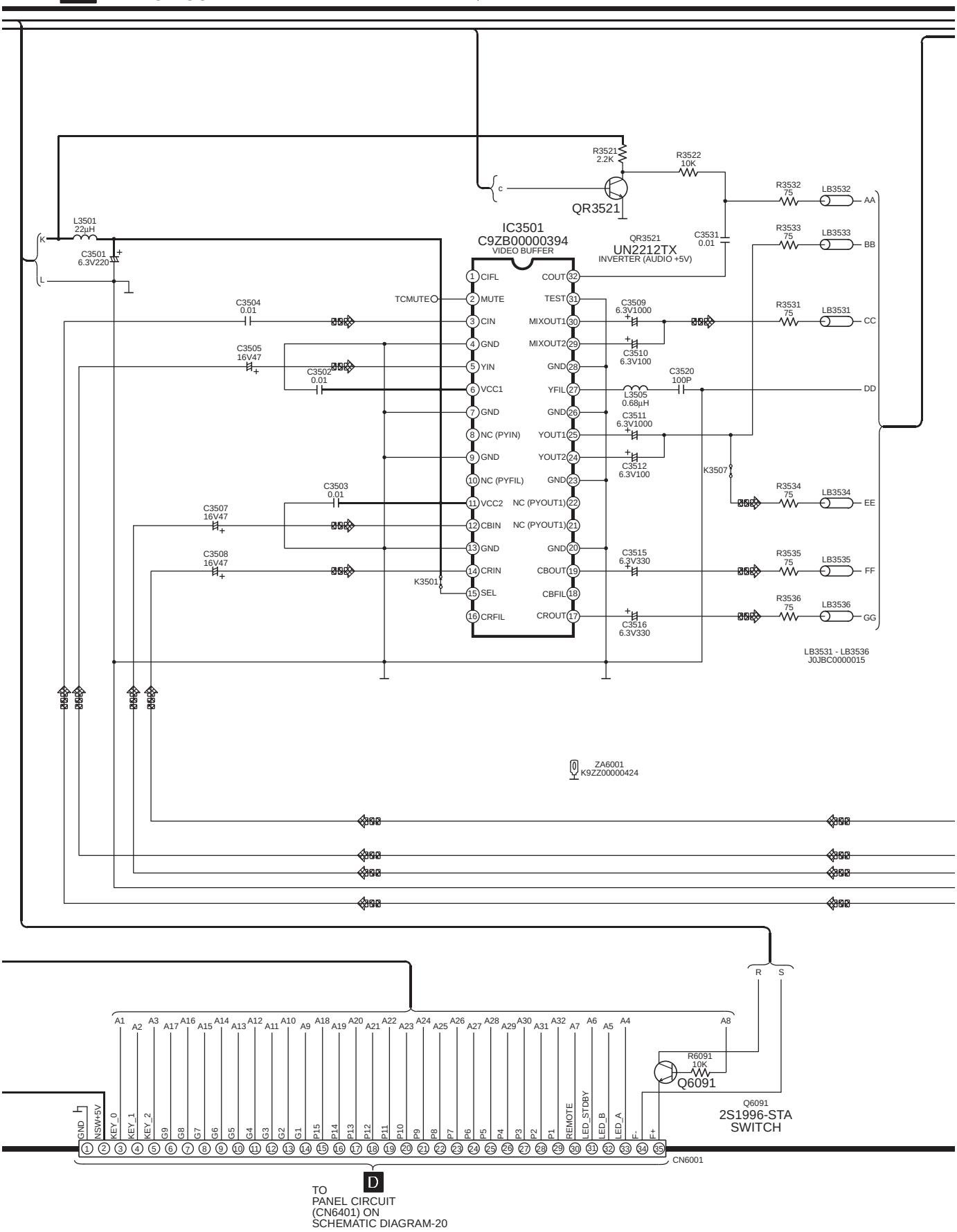
——— : +B SIGNAL LINE



SCHEMATIC DIAGRAM-16

C MAIN CIRCUIT

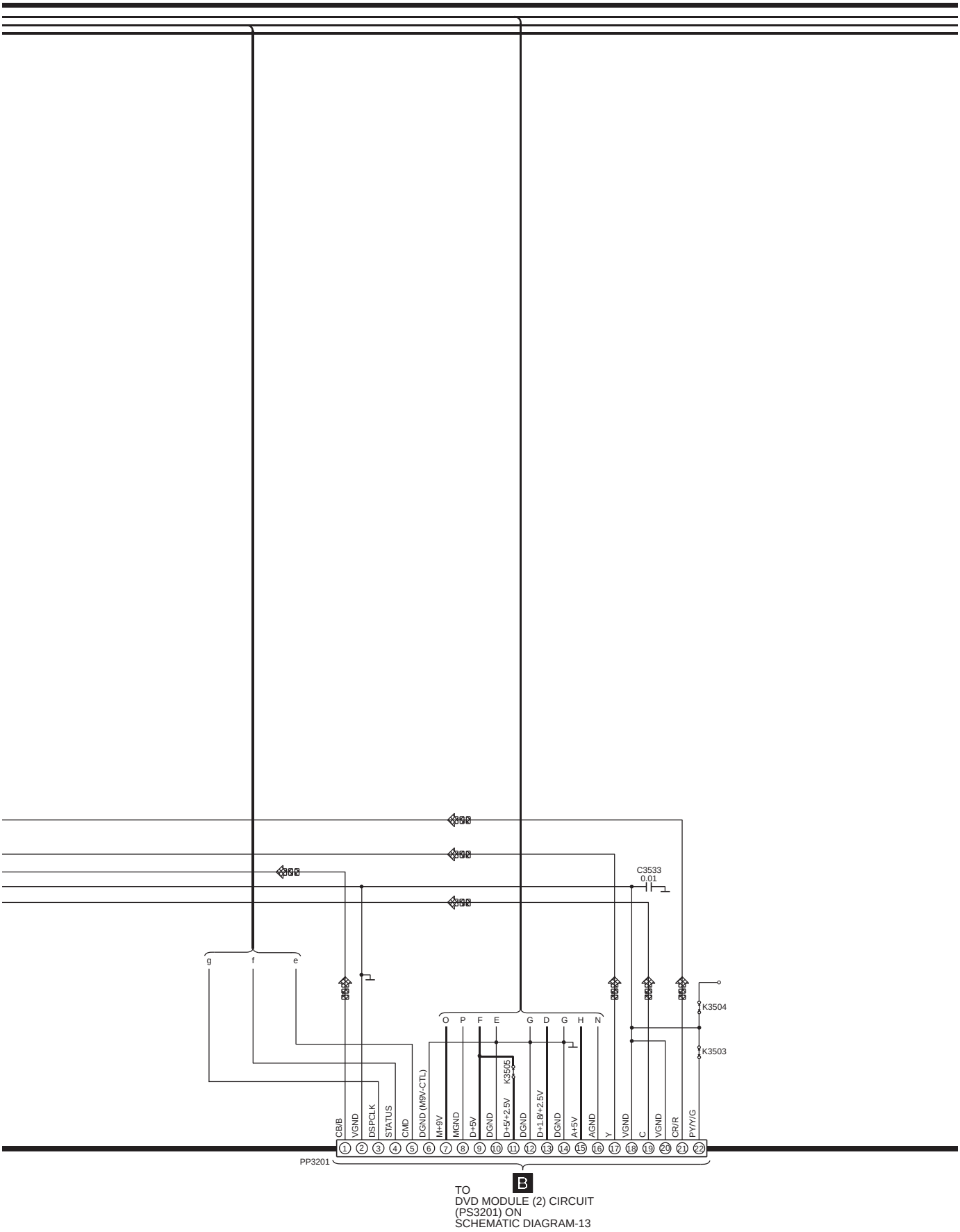
——— : +B SIGNAL LINE ⋙ : DVD VIDEO SIGNAL LINE



SCHEMATIC DIAGRAM-17

C MAIN CIRCUIT

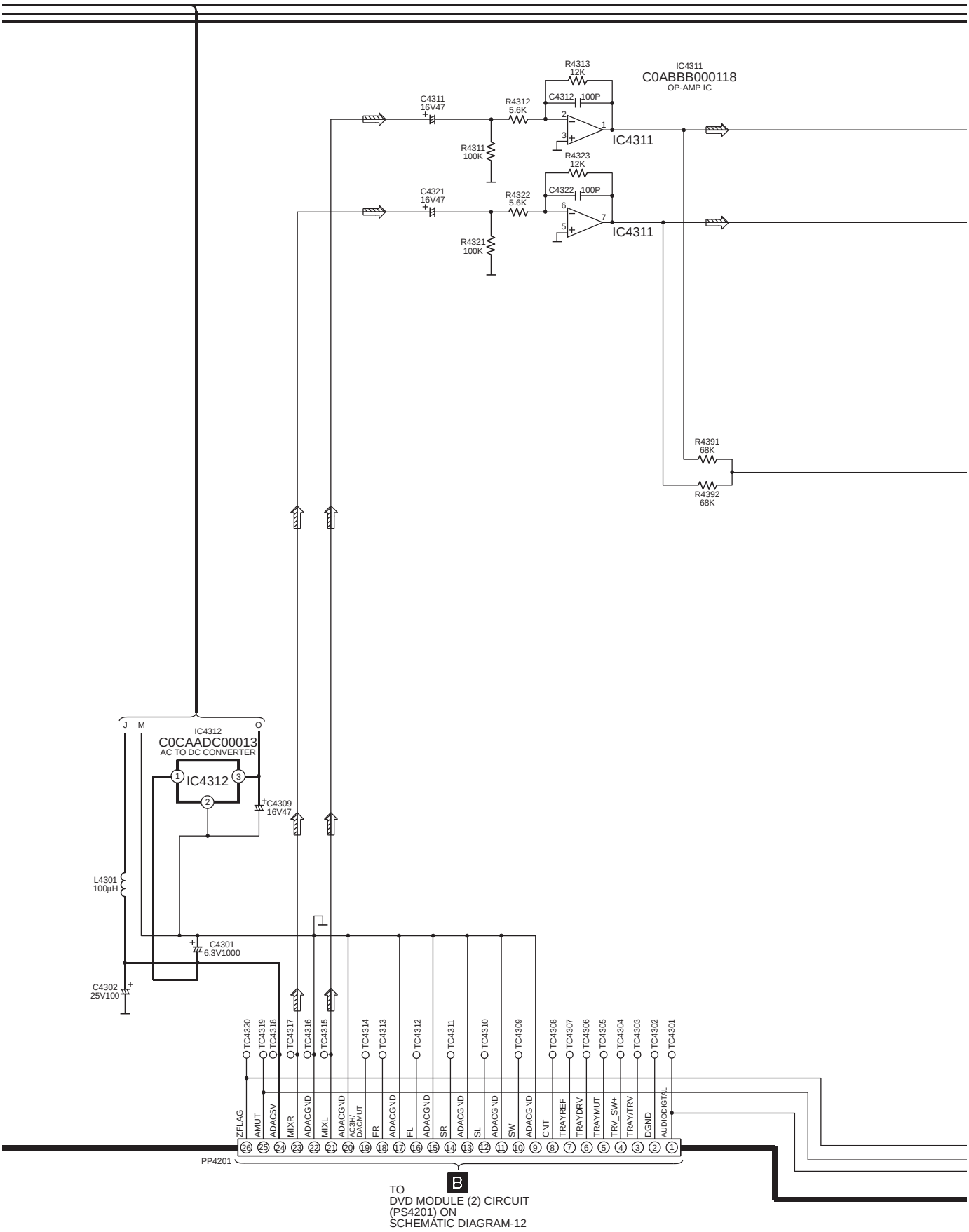
: +B SIGNAL LINE : DVD VIDEO SIGNAL LINE



SCHEMATIC DIAGRAM-18

C MAIN CIRCUIT

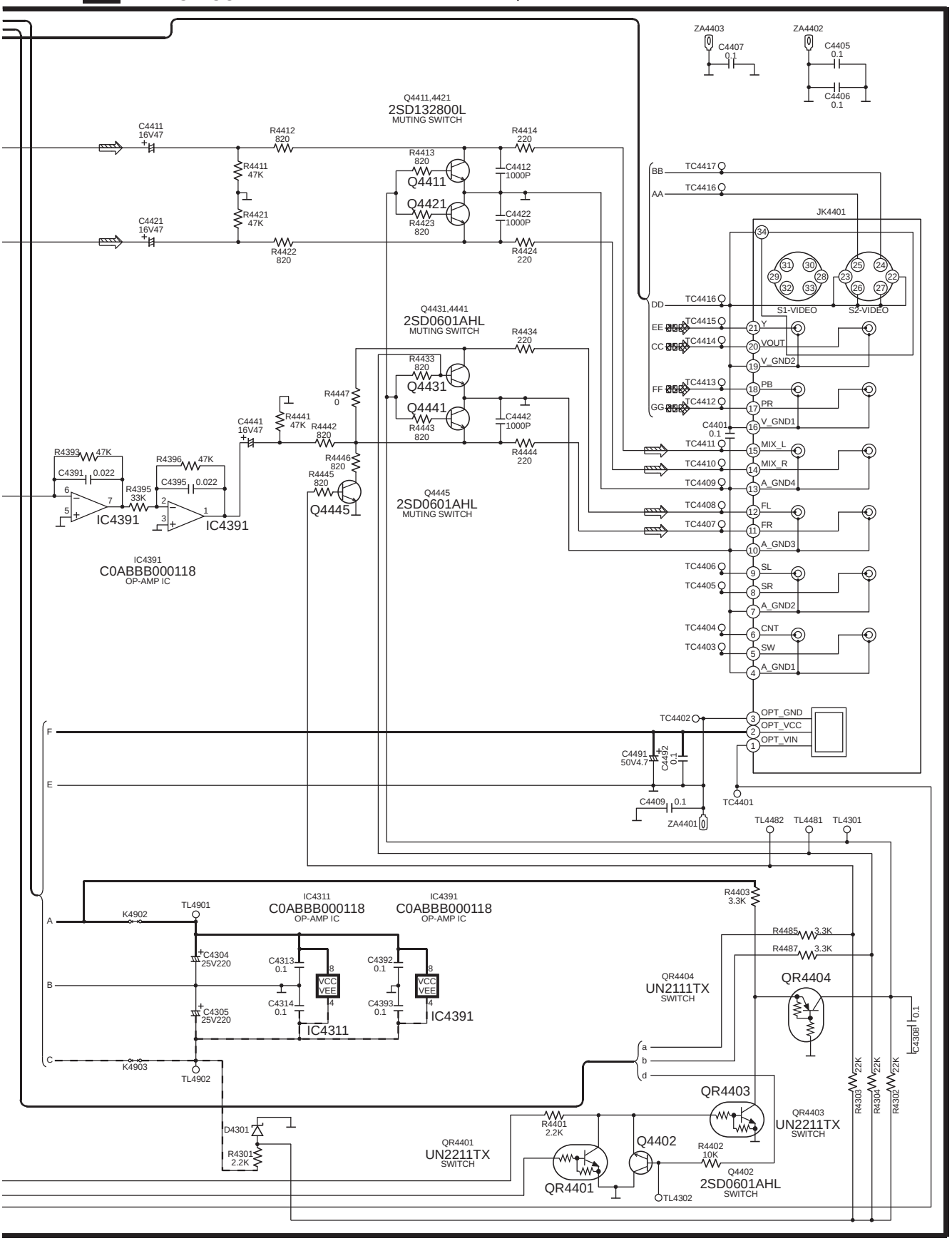
——— : +B SIGNAL LINE ⇨ : MAIN SIGNAL LINE



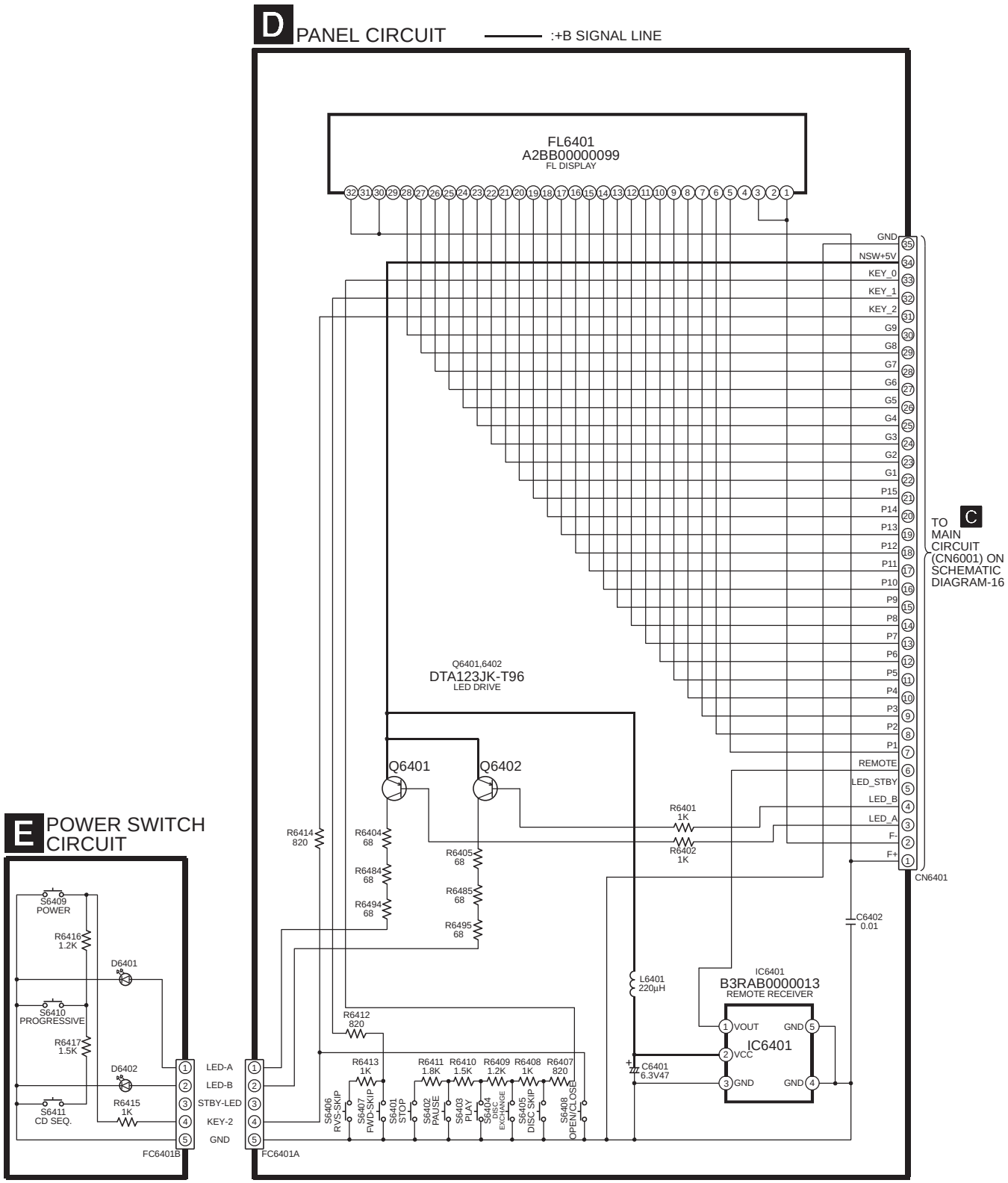
SCHEMATIC DIAGRAM-19

C MAIN CIRCUIT

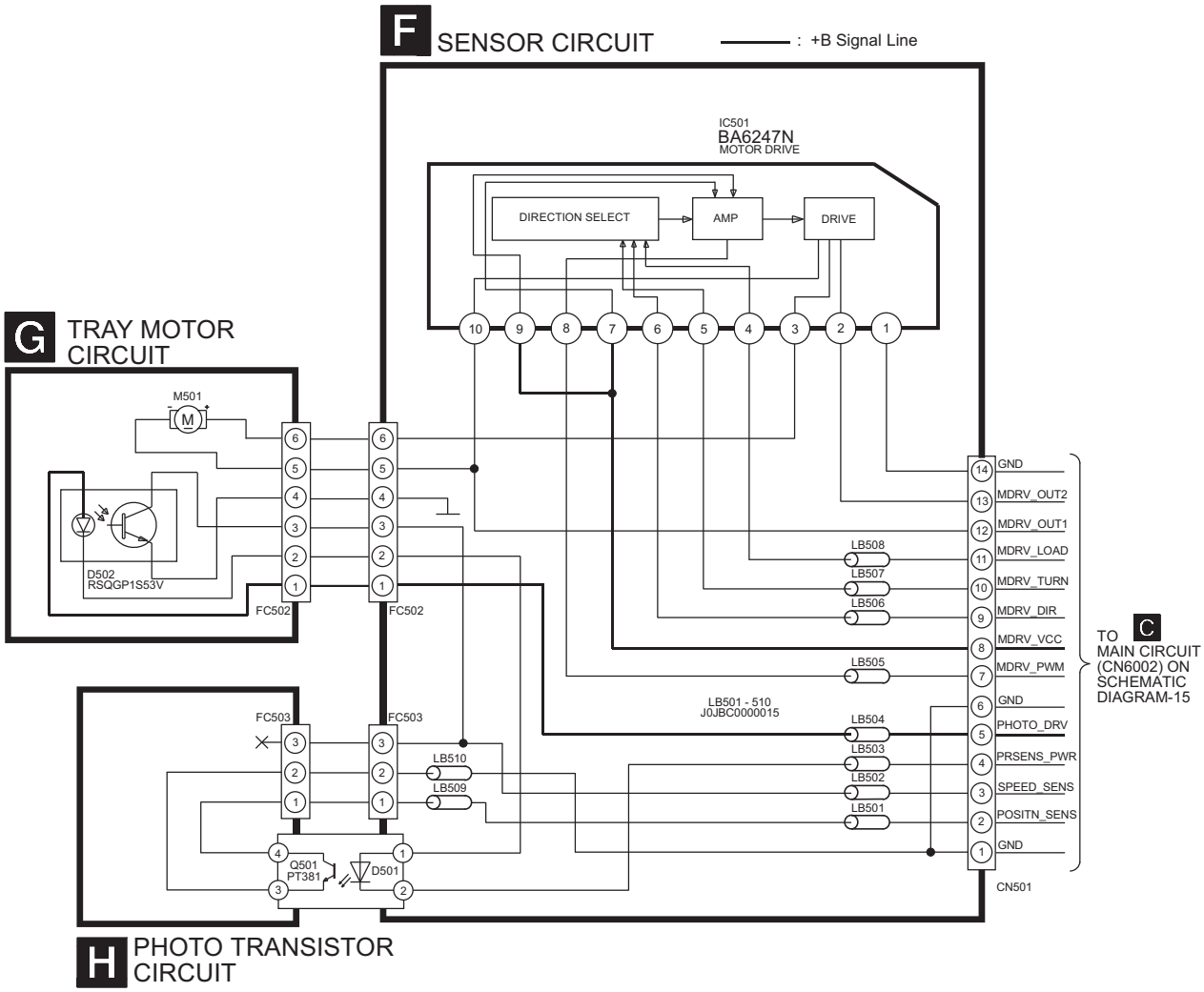
: -B SIGNAL LINE
: +B SIGNAL LINE
: DVD VIDEO SIGNAL LINE
: MAIN SIGNAL LINE

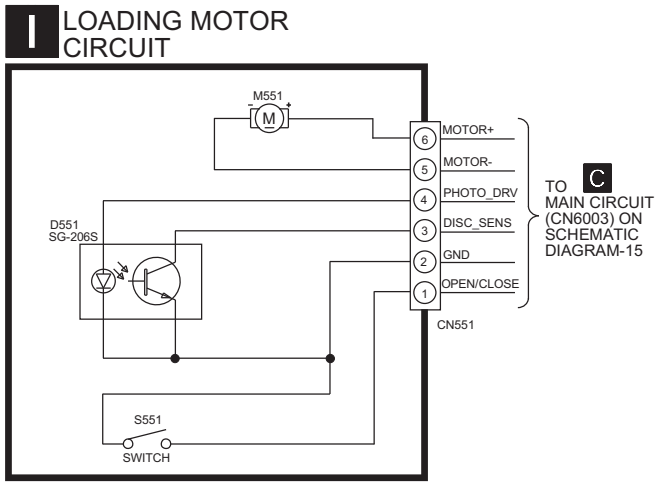


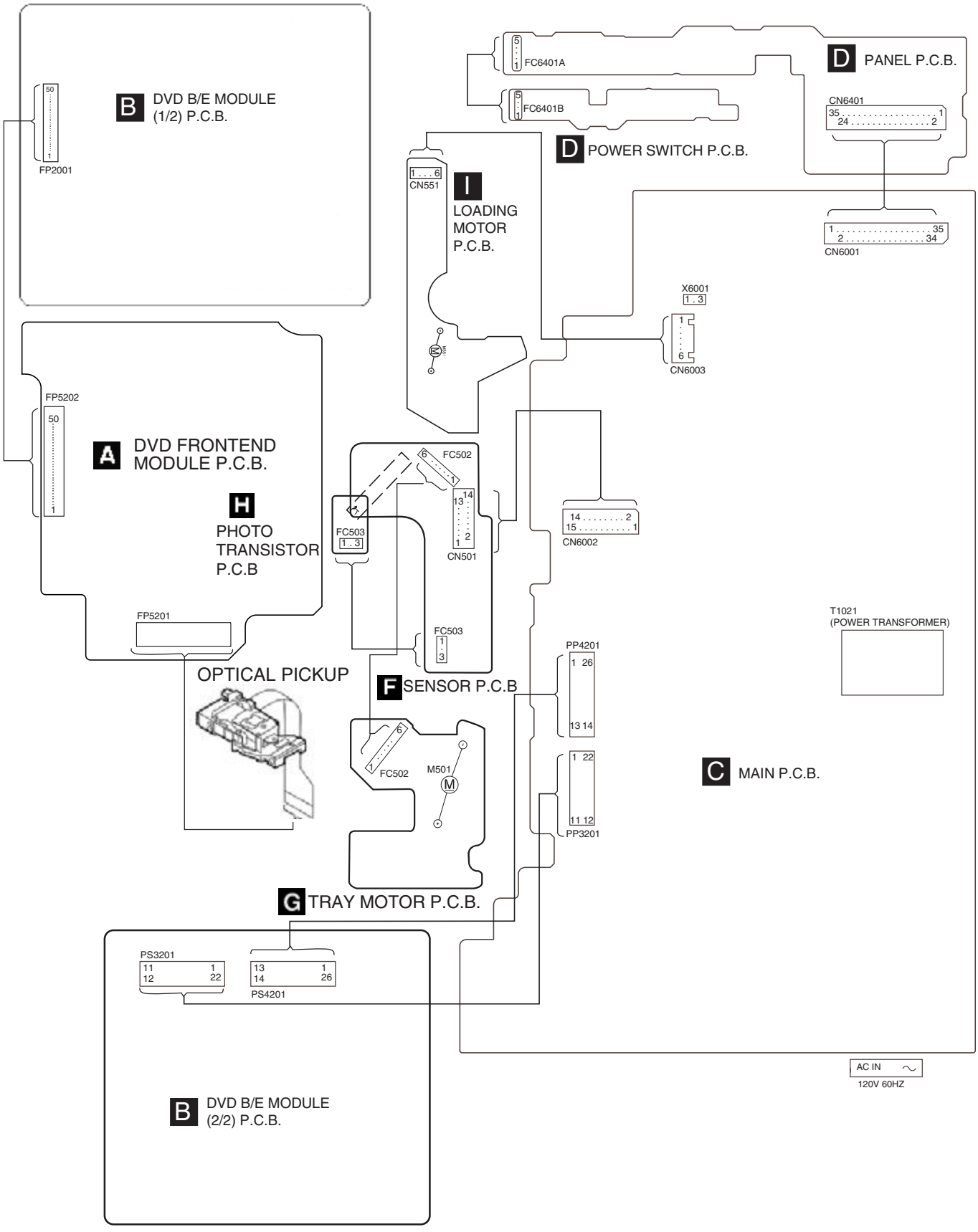
SCHEMATIC DIAGRAM-20

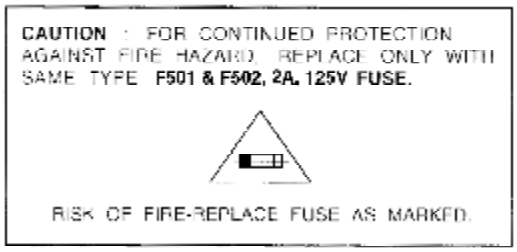


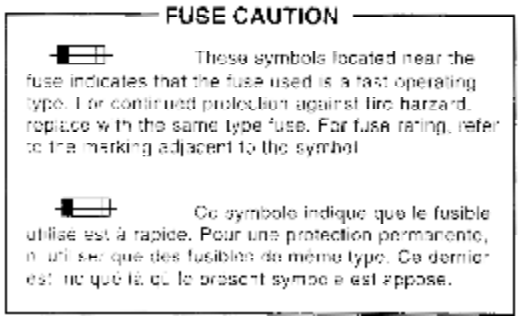
SCHEMATIC DIAGRAM-21






B DVD B/E MODULE (1/2) P.C.B.
FP2001
D PANEL P.C.B.
FC6401A
FC6401B
CN6401
D POWER SWITCH P.C.B.
CN551
I LOADING MOTOR P.C.B.
CN6001
X6001
CN6003
FP5202
A DVD FRONTEND MODULE P.C.B.
H PHOTO TRANSISTOR P.C.B
FC502
FC503
CN501
CN6002
FP5201
OPTICAL PICKUP
F SENSOR P.C.B
PP4201
T1021
(POWER TRANSFORMER)
C MAIN P.C.B.
M501
PP3201
G TRAY MOTOR P.C.B.
PS3201
PS4201
AC IN
120V 60HZ
B DVD B/E MODULE (2/2) P.C.B.


CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE F501 & F502, 2A, 125V FUSE.
RISK OF FIRE-REPLACE FUSE AS MARKED.


FUSE CAUTION
These symbols located near the fuse indicates that the fuse used is a fast operating type. For continued protection against fire hazard, replace with the same type fuse. For fuse rating, refer to the marking adjacent to the symbol
Ce symbole indique que le fusible utilise est à rapide. Pour une protection permanente, n'utiliser que des fusibles de même type. Ce dernier est indiqué là où le présent symbole est apposé.

CAUTION: TO PREVENT ELECTRIC SHOCK MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

17. Printed Circuit Board

18. Wiring Connection Diagram

19. Parts Location and Replacement Parts List

Notes:

- Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardent (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.

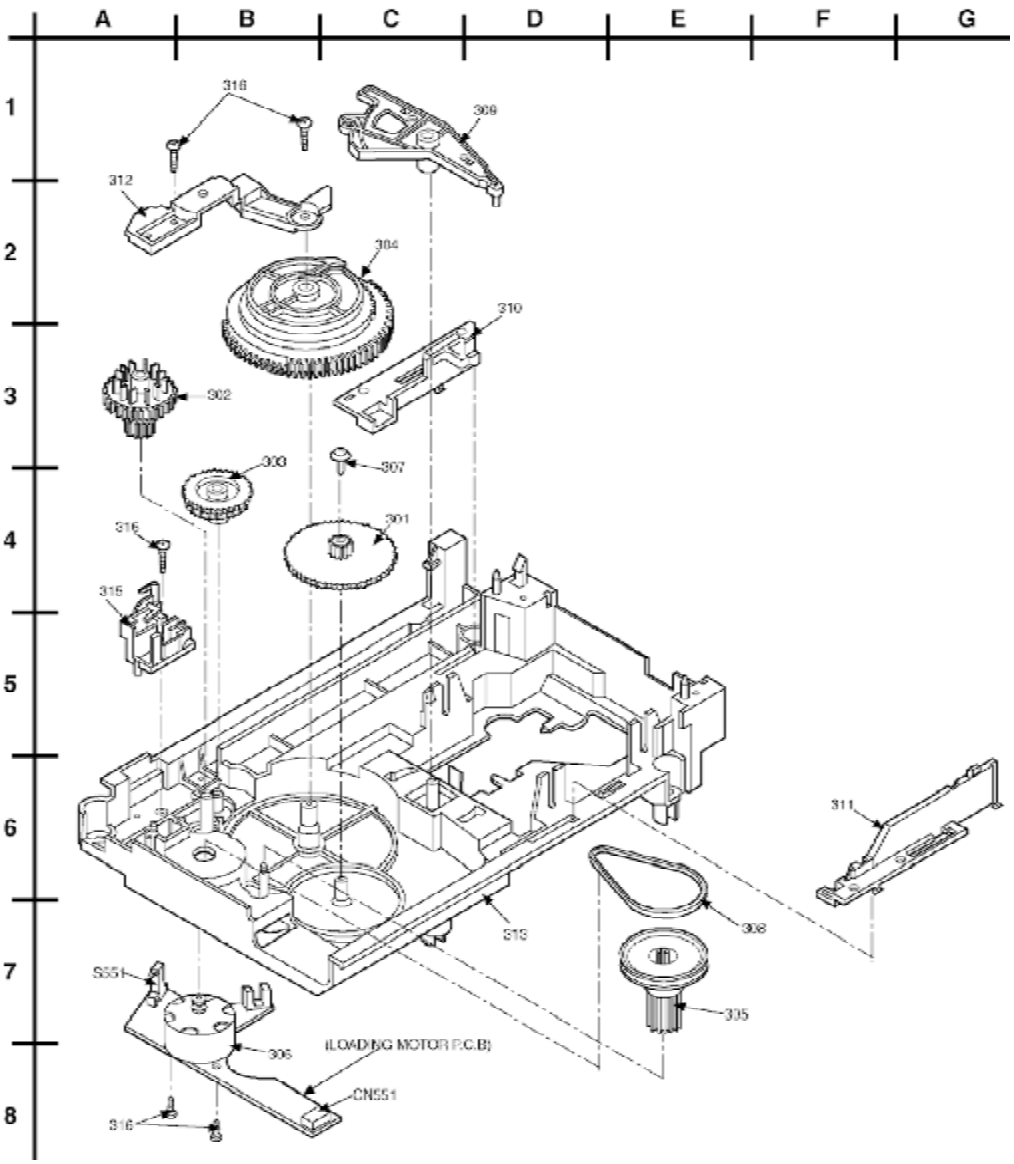
When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.

- The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour) Parts without these indications can be used for all areas.
- Warning: This product uses a laser diode. Refer to caution statements on “Precaution of Laser Diode”.
- Capacitor values are in microfarads (μ F) unless specified otherwise, P= Pico-farads (pF), F= Farads.
- Resistance values are in ohms, unless specified otherwise, 1K= 1,000 (OHM).
- The marking (RTL) indicates that the Retention Time is limited for this items. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of a availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
- [M] Indicates in the Remarks columns indicates parts supplied by MESA.
- The “(SF)” mark denotes the standard part.
- Reference for O/I book languages are as follows:

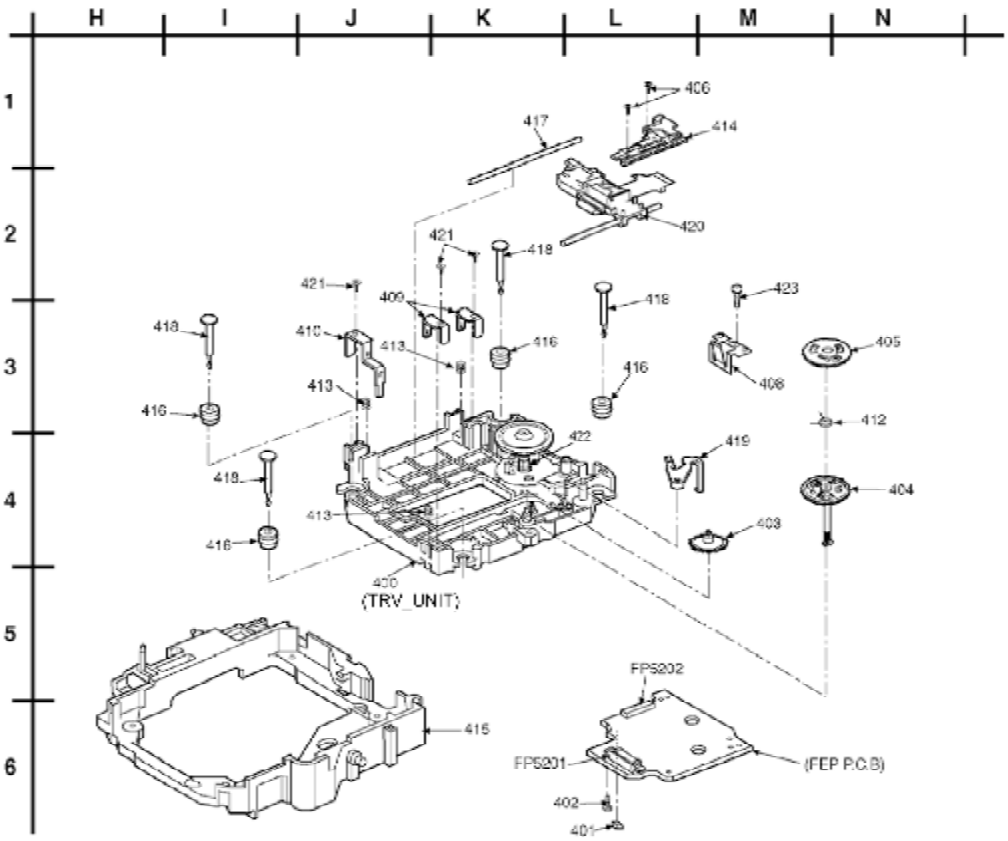
Ar :	Arabic	Du :	Dutch	It :	Italian	Sp :	Spanish
Cf :	Canadian French	En :	English	Ko :	Korean	Sw :	Swedish
Cz :	Czech	Fr :	French	Po :	Polish	Co :	Traditio Chinese
Da :	Danish	Ge :	German	Ru :	Russian	Cn :	Simplifi Chinese

19.1. Loading Mechanism and Traverse Unit

19.1.1. Loading Mechanism Parts Location



19.1.2. Traverse Parts Location



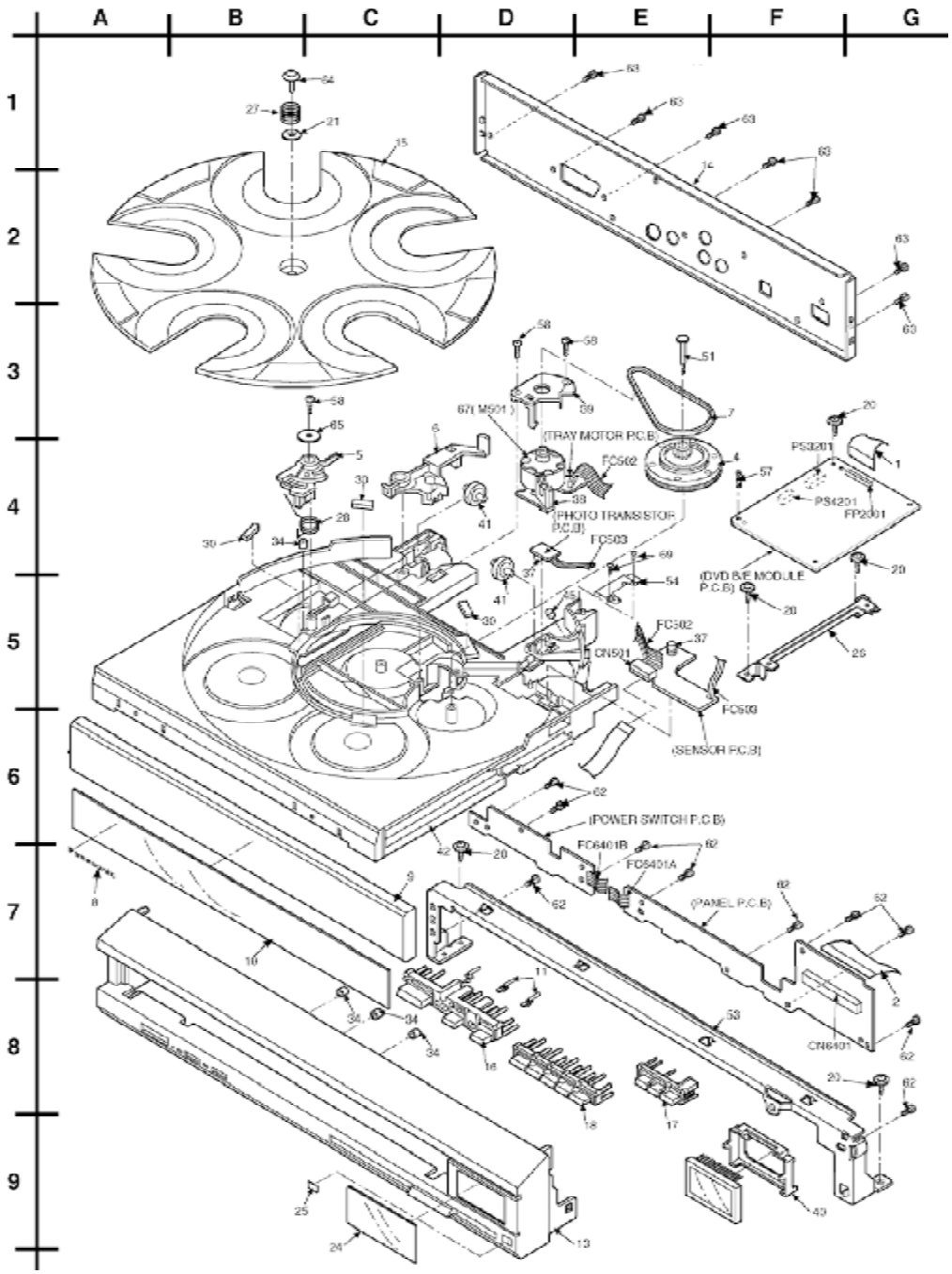
19.1.3. Loading Mechanism and Traverse Parts List

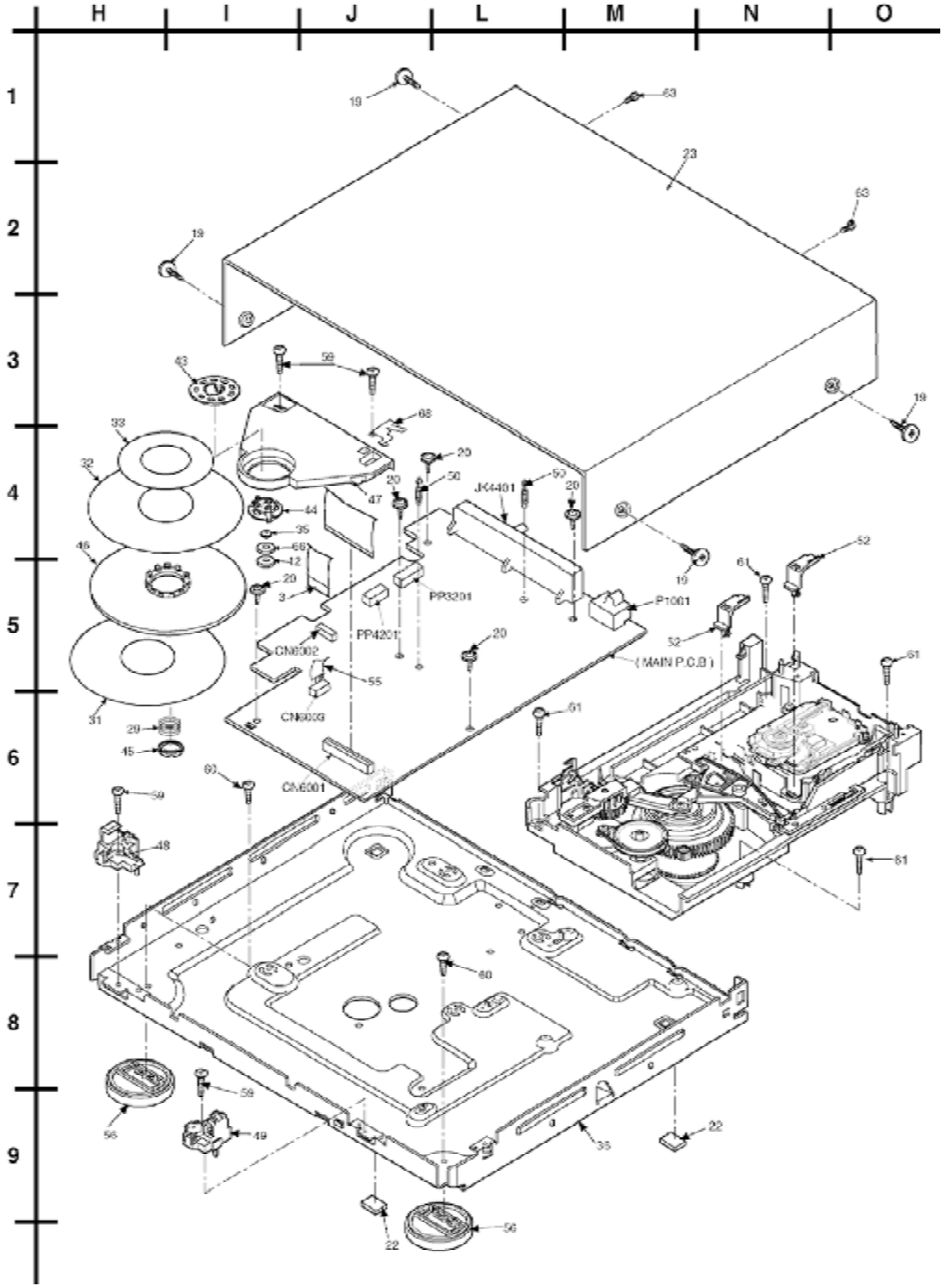
Ref. No.	Part No.	Part Name & Description	Remarks
		TRAVERSE DECK	
301	RDG0270	SPEED REDUCTION GEAR	[M]
302	RDG0271	DRIVE GEAR A	[M]
303	RDG0272	DRIVE GEAR B	[M]
304	RDK0025	DRIVE CAM	[M]
305	RDP0050	PULLEY GEAR	[M]
306	RFKPLPD667PB	LOADING MOTOR ASS'Y	[M]
307	RHD26019	SCREW	[M]
308	RMG0268-K	BELT	[M]
309	RML0334	CHANGE LEVER	[M]
310	RMM0117	SLIDE PLATE 1	[M]
311	RMM0118-1	SLIDE PLATE 2	[M]
312	RMR0746-W	STRENGTHENING PLATE	[M]
313	RFKNDCV51CAK	MECHA BASE ASS'Y	[M]
315	RXQ0346-1	SLIDER ASSY	[M]
316	XTB3+10JFZ	SCREW	[M]
400	RAE1811Z-S	TRV BASE UNIT	[M]
401	RMG0558-K	P.C.B. RUBBER	[M]
402	RHD20060	PCB SCREW	[M]
403	RDG0499	TRV GEAR A	[M]
404	RDG0500	TRV GEAR B	[M]
405	RDG0501	TRV GEAR C	[M]
406	RHD17036	DRIVE RACK SCREW	[M]
408	RMC0387	SUPPORT SPRING	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
409	RMC0415	ADJUST SPRING HOLDER	[M]
410	RMC0416	ADJUST SPRING HOLDER	[M]
412	RME0319	TRV GEAR SPRING	[M]
413	RME0320	ADJUSTMENT SPRING	[M]
414	RMM0234-1	TRV DRIVE RACK	[M]
415	RMR1356-K	UNIT CHASSIS	[M]
416	RMG0545-A	FLOATING RUBBER	[M]
417	RMS0711	GUIDE SHAFT	[M]
418	RMS0712-1	FIXED PIN	[M]
419	RMX0192	INNER STOPPER	[M]
420	RXQ0810	OPU UNIT	[M]
421	VHD1224	ADJ SPRING HOLDER SC	[M]
422	RXQ0749	SPINDEL MOTOR ASS'Y	[SPC]
423	XTV2+6G	PCB SCREW	[M]

19.2. Cabinet

19.2.1. Cabinet Parts Location


A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
(TRAY MOTOR P.C.B)
PHOTO TRANSISTOR P.C.B)
(DVD B/E MODULE P.C.B)
(SENSOR P.C.B)
(POWER SWITCH P.C.B)
(PANEL P.C.B)
FC503
FC502
FC509
FC6401B
FC6401A
CN501
CN6401
PS3201
PS4201
FP2001



19.2.2. Cabinet Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	REZ1440	50P FFC (TRV-B/E)	[M]
2	REZ1441	35P FFC (PANEL-MAIN)	[M]
3	REZ1442	14P FFC (TRAY-MAIN)	[M]
4	RDG0267	TRAY REDUCTION GEAR	[M]
5	RDG0268-1	CLOSE LOCK GEAR	[M]
6	RDG0269-3	OPEN LOCK GEAR	[M]
7	RDV0031	BELT	[M]
8	RGB0036-2N	BRAND BADGE	[M]
9	RGK1497-K	TRAY ORNAMENT	[M]
10	RGK1498C-K	TRAY SHEET	[M]
11	RGL0585-Q	PANEL LIGHT	[M]
12	JSM0048	MAGNET	[M]
13	RGP0917A-K	FRONT PANEL	[M]
14	RGR0325C-C	REAR PANEL	[M]
15	RGT0019-2	ROTARY TRAY	[M]
16	RGU2082-K	POWER BUTTON	[M]
17	RGU2083-K	DISC EXCHANGE BUTTON	[M]
18	RGU2084-K	PLAY BUTTON	[M]
19	RHD30007-K1	SCREW	[M]
20	RHD30090	SCREW	[M]
21	RHW81001-1	WASHER	[M]
22	RKA0105-KJ	CUSHION	[M]
23	RKM0462-K1	TOP CABINET	[M]
24	RKW0681B-Q	FL WINDOW	[M]
25	RKW0682-K	SENSOR WINDOW	[M]
26	RMA1535	MOD PCB BRACKET	[M]
27	RMB0365	TRAY SPRING	[M]
28	RME0152-3	LOCK GEAR SPRING	[M]
29	RME0318-1	CLAMP SPRING	[M]
30	RMF0182	TRAY FELT	[M]
31	RMF0290	CLAMPER SHEET	[M]
32	RMF0295	UPPER SHEET	[M]
33	RMF0296	INNER SHEET	[M]
34	RMG0200	SHUTTER RUBBER	[M]
35	RMG0546-A	CLAMP RUBBER	[M]
36	RMK0520	BOTTOM CHASSIS	[M]
37	RMN0254-1	LED HOLDER	[M]
38	RMN0255-2	SENSOR HOLDER	[M]
39	RMN0263	MOTOR HOLDER	[M]
40	RMN0695	FL HOLDER	[M]
41	RMR0546-W2	ROLLER	[M]
42	RMR0745D-K2	SL4 DVD TRAY BASE	[M]
43	RMR1318-X	SPRING HOOK	[M]
44	RMR1319-X	MAGNET HOLDER	[M]
45	RMR1321-X	SPRING HOLDER	[M]
46	RMR1322-K	CLAMPER	[M]
47	RMR1425-X	SLIM CLAMP PLATE	[M]
48	RMR1438-K	TRAY BASE GUIDE (L)	[M]
49	RMR1439-K	TRAY BASE GUIDE (R)	[M]
50	RMR1440-X	PCB SUPPORT	[M]
51	RMS0123-1	FIXED PIN B	[M]
52	RMX0193	TRAY GUIDE	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
53	RSC0628	SHIELD PLATE	[M]
54	RSC0651	TRAY SHIELD PLATE	[M]
55	RWJ1806120XX	6P WIRE (MECHA-MAIN)	[M]
56	RYQ0349-N	FOOT	[M]
57	SHR415	PLASTIC RIVET	[M]
58	XTB3+10G	SCREW	[M]
59	XTB3+10JFZ	SCREW	[M]
60	XTB3+6J	SCREW	[M]
61	XTB3+8JFZ	SCREW	[M]
62	XTBS26+10J	SCREW	[M]
63	XTBS3+8JFZ1	SCREW	[M]
64	XTWS3+10S	SCREW	[M]
65	XWE3D13	WASHER	[M]
66	XWG6FFY	WASHER	[M]
67	RFKPLPD667PA	TRAY MOTOR ASS'Y	[M]
68	RMC0496	TRAY EARTH PLATE	[M]
69	RMN0703	TAG HOLDER	[M]

19.3. Component Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PRINTED CIRCUIT BOARD	
	REP3091A-N	DVD FRONTEND MODULE (1/2) P.C.B.	[M](RTL)
	REP3091A-N	DVD FRONTEND MODULE (2/2) P.C.B.	[M](RTL)
	REP3303S	DVD B/E MODULE (1/2) P.C.B.	[M](RTL)
	REP3303S	DVD B/E MODULE (2/2) P.C.B.	[M](RTL)
	REP3319D	MAIN P.C.B.	[M](RTL)
	REP3320A	PANEL P.C.B.	[M](RTL)
	REP3320A	POWER SWITCH P.C.B.	[M](RTL)
	REPX0095A-N	LOADING MOTOR P.C.B.	[M](RTL)
	REPX0096B-N	PHOTO TRANSISTOR P.C.B.	[M](RTL)
	REPX0096B-N	SENSOR P.C.B.	[M](RTL)
	REPX0096B-N	TRAY MOTOR P.C.B.	[M](RTL)
		INTEGRATED CIRCUITS	
IC501	BA6247N	IC	[M]
IC1101	C0DAEMZ00001	IC	[M]
IC1151	C0CBCHG00003	IC	[M] ⚠
IC2001	MN677203NP1	IC NODC	[M]
IC2061	C3ABKG000057	IC 4M DRAM	[M]
IC2501	C0GBG0000033	IC	[M]
IC3001	MN677533MP	IC	[M]
IC3061	C3ABMG000103	IC 16M SDRAM	[M]
IC3501	C9ZB00000394	IC VIDEO BUFFER	[M]
IC4001	TMS320C5410A	IC WMA DECODING LSI	[M]
IC4021	C0CBCAC00025	IC VOLTAGE REGULATOR	[M] ⚠
IC4031	C0JBAR000294	IC SEL.MULTIPLIES	[M]
IC4041	C0JBAA000260	IC AND GATE	[M]
IC4051	C0JBAA000260	IC AND GATE	[M]
IC4061	C0JBAF000367	IC D FLIP-FLOP GATE	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
IC4201	C0FBBK000030	IC 2 CH D/A CONVETER	[M]
IC4311	C0ABBB000118	IC	[M]
IC4312	C0CAADC00013	IC	[M]
IC4391	C0ABBB000118	IC	[M]
IC5201	AN8708FHK	IC	[M]
IC6001	MN101C35DCN	IC MICON	[M]
IC6011	C0EBE0000106	IC	[M]
IC6201	MN102H60GFC	IC CPU	[M]
IC6221	C0JBAA000001	IC	[M]
IC6222	C0JBAA000001	IC	[M]
IC6251	C0DBCGE00002	IC REGULATOR	[M] ⚠
IC6301	PST596JNR	IC RESET	[M]
IC6302	RFKFCV62D080	IC 8M FLASH ROM	[SPC]
IC6303	C3EBFC000030	IC 8M EEPROM	[M]
IC6401	B3RAB0000013	IC REMOTE RECEIVER	[M]
IC6501	C1DB00000582	IC	[M]
		TRANSISTORS	
Q501	PT381	TRANSISTOR	[M]
Q1021	2SC4662LF654	TRANSISTOR	[M]
Q1051	B3PBA0000076	TRANSISTOR	[M]
Q1052	2SD19960SA	TRANSISTOR	[M] ⚠
Q1115	B1DHCC000029	TRANSISTOR	[M] ⚠
Q1125	2SB14170QA	TRANSISTOR	[M]
Q1126	XN0150100L	TRANSISTOR	[M]
Q1165	2SA1309ARA	TRANSISTOR	[M]
Q4402	2SD0601AHL	TRANSISTOR	[M]
Q4411	2SD132800L	TRANSISTOR	[M]
Q4421	2SD132800L	TRANSISTOR	[M]
Q4431	2SD0601AHL	TRANSISTOR	[M]
Q4441	2SD0601AHL	TRANSISTOR	[M]
Q4445	2SD0601AHL	TRANSISTOR	[M]
Q5211	B1BDBF000004	TRANSISTOR	[M]
Q5215	B1BDBF000004	TRANSISTOR	[M]
Q6091	2SD1996-STA	TRANSISTOR	[M]
Q6401	DTA123JK-T96	TRANSISTOR	[M]
Q6402	DTA123JK-T96	TRANSISTOR	[M]
QR1115	UNR221300L	TRANSISTOR	[M]
QR3521	UN2212TX	TRANSISTOR	[M]
QR4401	UN2211TX	TRANSISTOR	[M]
QR4403	UN2211TX	TRANSISTOR	[M]
QR4404	UN2111TX	TRANSISTOR	[M]
QR5251	UN2121-TX	TRANSISTOR	[M]
QR6061	UN2215TX	TRANSISTOR	[M]
QR6062	UN2215TX	TRANSISTOR	[M]
QR6301	UN5212TX	TRANSISTOR	[M]
		DIODES	
D501	B3EA00000014	DIODE	[M]
D502	RSQGP1S53V	DIODE	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
D551	SG-206S	DIODE	[M]
D1001	ERZVA5D471	DIODE	[M] ⚠
D1002	D4EA7361A002	DIODE	[M] ⚠
D1011	B0EBKT000002	DIODE	[M] ⚠
D1031	VSD0002-T1	DIODE	[M]
D1041	B0HAGM000006	DIODE	[M]
D1051	B0AACK000004	DIODE	[M]
D1052	B0AACK000004	DIODE	[M]
D1053	MA4036MTA	DIODE	[M]
D1054	AU01ZV2	DIODE	[M]
D1101	MA7075A-TR	DIODE	[M]
D1111	21DQ04FC4	DIODE	[M]
D1121	21DQ04FC4	DIODE	[M]
D1125	MA2J11100L	DIODE	[M]
D1131	B0JAJG000002	DIODE	[M]
D1132	MA7150B-TR	DIODE	[M]
D1141	B0JAJG000002	DIODE	[M]
D1151	B0JAJG000002	DIODE	[M]
D1152	B0JAJG000002	DIODE	[M]
D1161	B0HAGM000006	DIODE	[M]
D1162	MAZ80300HL	DIODE	[M]
D1165	MAZ82400HL	DIODE	[M]
D1171	B0JAME000037	DIODE	[M]
D2001	MA2J11100L	DIODE	[M]
D4301	MAZ80470ML	DIODE	[M]
D5251	MA2J72800L	DIODE	[M]
D6061	B0JCME000025	DIODE	[M]
D6063	MAZ80680ML	DIODE	[M]
D6064	B0BC5R600003	DIODE	[M]
D6301	MA2SD2400L	DIODE	[M]
D6401	SLR325MCT31W	DIODE	[M]
D6402	B3ADA0000087	DIODE	[M]
DZ1001	VSQ1003-F	DIA SURGE	[M] ⚠
LB501	J0JBC0000015	CHIP INDUCTOR	[M]
LB502	J0JBC0000015	CHIP INDUCTOR	[M]
LB503	J0JBC0000015	CHIP INDUCTOR	[M]
LB504	J0JBC0000015	CHIP INDUCTOR	[M]
LB505	J0JBC0000015	CHIP INDUCTOR	[M]
LB506	J0JBC0000015	CHIP INDUCTOR	[M]
LB507	J0JBC0000015	CHIP INDUCTOR	[M]
LB508	J0JBC0000015	CHIP INDUCTOR	[M]
LB509	J0JBC0000015	CHIP INDUCTOR	[M]
LB510	J0JBC0000015	CHIP INDUCTOR	[M]
LB2001	J0JHC0000045	CHIP CAPACITOR	[M]
LB2011	VLP0323A601R	CHIP INDUCTOR	[M]
LB2012	VLP0323A601R	CHIP INDUCTOR	[M]
LB2013	VLP0323A601R	CHIP INDUCTOR	[M]
LB2014	VLP0323A601R	CHIP INDUCTOR	[M]
LB2015	VLP0323A601R	CHIP INDUCTOR	[M]
LB2016	VLP0323A601R	CHIP INDUCTOR	[M]
LB2017	VLP0323A601R	CHIP INDUCTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
LB2018	VLP0323A601R	CHIP INDUCTOR	[M]
LB2019	VLP0323A601R	CHIP INDUCTOR	[M]
LB2020	VLP0323A601R	CHIP INDUCTOR	[M]
LB2021	VLP0323A601R	CHIP INDUCTOR	[M]
LB2022	VLP0323A601R	CHIP INDUCTOR	[M]
LB2023	VLP0323A601R	CHIP INDUCTOR	[M]
LB2024	VLP0323A601R	CHIP INDUCTOR	[M]
LB2025	VLP0323A601R	CHIP INDUCTOR	[M]
LB2026	VLP0323A601R	CHIP INDUCTOR	[M]
LB2027	VLP0323A601R	CHIP INDUCTOR	[M]
LB2028	VLP0323A601R	CHIP INDUCTOR	[M]
LB2029	VLP0323A601R	CHIP INDUCTOR	[M]
LB2030	VLP0323A601R	CHIP INDUCTOR	[M]
LB2031	VLP0323A601R	CHIP INDUCTOR	[M]
LB2032	VLP0323A601R	CHIP INDUCTOR	[M]
LB2033	VLP0323A601R	CHIP INDUCTOR	[M]
LB2034	VLP0323A601R	CHIP INDUCTOR	[M]
LB2035	VLP0323A601R	CHIP INDUCTOR	[M]
LB2036	VLP0323A601R	CHIP INDUCTOR	[M]
LB2037	VLP0323A601R	CHIP INDUCTOR	[M]
LB2038	VLP0323A601R	CHIP INDUCTOR	[M]
LB2039	VLP0323A601R	CHIP INDUCTOR	[M]
LB2040	VLP0323A601R	CHIP INDUCTOR	[M]
LB2041	VLP0323A601R	CHIP INDUCTOR	[M]
LB2042	J0JHC0000045	CHIP CAPACITOR	[M]
LB2043	J0JHC0000045	CHIP CAPACITOR	[M]
LB3001	J0JHC0000045	CHIP CAPACITOR	[M]
LB3002	J0JHC0000045	CHIP CAPACITOR	[M]
LB3201	VLP0155-T	CHIP BEAD	[M]
LB3202	D0GB101JA002	100 1/16W	[M]
LB3203	D0GB101JA002	100 1/16W	[M]
LB3204	D0GB101JA002	100 1/16W	[M]
LB3206	VLP0155-T	CHIP BEAD	[M]
LB3207	VLP0155-T	CHIP BEAD	[M]
LB3208	VLP0155-T	CHIP BEAD	[M]
LB3531	J0JBC0000015	CHIP INDUCTOR	[M]
LB3532	J0JBC0000015	CHIP INDUCTOR	[M]
LB3533	J0JBC0000015	CHIP INDUCTOR	[M]
LB3534	J0JBC0000015	CHIP INDUCTOR	[M]
LB3535	J0JBC0000015	CHIP INDUCTOR	[M]
LB3536	J0JBC0000015	CHIP INDUCTOR	[M]
LB4200	VLP0323A601R	CHIP INDUCTOR	[M]
LB4201	VLP0323A601R	CHIP INDUCTOR	[M]
LB4214	VLP0323A601R	CHIP INDUCTOR	[M]
LB4215	VLP0323A601R	CHIP INDUCTOR	[M]
LB4216	VLP0323A601R	CHIP INDUCTOR	[M]
LB4217	VLP0323A601R	CHIP INDUCTOR	[M]
LB5201	JALBK2HS470T	CHIP INDUCTOR	[M]
LB5202	VLP0323A601R	CHIP INDUCTOR	[M]
LB5203	VLP0155-T	CHIP BEAD	[M]
LB5204	VLP0155-T	CHIP BEAD	[M]
LB5205	VLP0323A601R	CHIP INDUCTOR	[M]
LB5206	VLP0323A601R	CHIP INDUCTOR	[M]
LB6061	J0JBC0000015	CHIP INDUCTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
LB6062	J0JBC0000015	CHIP INDUCTOR	[M]
LB6063	J0JBC0000015	CHIP INDUCTOR	[M]
LB6064	J0JBC0000015	CHIP INDUCTOR	[M]
LB6065	J0JBC0000015	CHIP INDUCTOR	[M]
LB6066	J0JBC0000015	CHIP INDUCTOR	[M]
LB6067	J0JBC0000015	CHIP INDUCTOR	[M]
LB6068	J0JBC0000015	CHIP INDUCTOR	[M]
LB6069	J0JBC0000015	CHIP INDUCTOR	[M]
LB6070	J0JBC0000015	CHIP INDUCTOR	[M]
LB6071	J0JBC0000015	CHIP INDUCTOR	[M]
LB6201	VLP0323A601R	CHIP INDUCTOR	[M]
LB6202	VLP0155-T	CHIP BEAD	[M]
LB6221	VLP0323A601R	CHIP INDUCTOR	[M]
LB6501	VLP0323A601R	CHIP INDUCTOR	[M]
LB6502	VLP0323A601R	CHIP INDUCTOR	[M]
LB6512	VLP0155-T	CHIP BEAD	[M]
LB6513	VLP0155-T	CHIP BEAD	[M]
LB6514	VLP0155-T	CHIP BEAD	[M]
LB6515	VLP0157-T	CHIP INDUCTOR	[M]
LR1041	VLP0392-T	CHIP INDUCTOR	[M]
		SWITCHES	
S551	RSH1A005-1U	SWITCH	[M]
S6401	EVQ11G07K	SW STOP	[M]
S6402	EVQ11G07K	SW PAUSE	[M]
S6403	EVQ11G07K	SW PLAY	[M]
S6404	EVQ11G07K	SW DISC EXCHANGE	[M]
S6405	EVQ11G07K	SW DISC SKIP	[M]
S6406	EVQ11G07K	SW REVERSE SKIP	[M]
S6407	EVQ11G07K	SW FORWARD SKIP	[M]
S6408	EVQ11G07K	SW OPEN/CLOSE	[M]
S6409	EVQ11G07K	SW POWER	[M]
S6410	EVQ11G07K	SW A. SRD	[M]
S6411	EVQ11G07K	SW CD SEQ	[M]
		SWITCHES	
SW2501	RSH1A048-A	SW LEAF	[M]
		CONNECTORS	
CN501	RJS1A6714-Q	14P CONNECTOR	[M]
CN551	RJS2A1506	6P CONNECTOR	[M]
CN6001	K1MN35A00001	FFC CONNECTOR	[M]
CN6002	RJS1A6814	FFC CONNECTOR	[M]
CN6003	RJS1A6606T1	TAPING CONNECTOR	[M]
CN6401	RJS1A6235-1	CONNECTOR	[M]
PS3201	K1KB22A00025	CONNECTOR	[M]
PS4201	K1KB14A00037	CONNECTOR	[M]
PS6201	K1MN10A00030	CONNECTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		COILS & TRANSFORMERS	
L1001	ELF15N005A	COIL	[M] ⚠
L1111	G0A100H00014	INDUCTOR	[M]
L1115	ELELN100KA	COIL	[M]
L1131	VLQEL05T330K	COIL	[M]
L1141	VLQEL05T330K	COIL	[M]
L1151	G0A220G00018	INDUCTOR	[M]
L2001	G1C100K00020	CHIP INDUCTOR	[M]
L3092	G1C100K00020	CHIP INDUCTOR	[M]
L3501	G0C220JA0019	CHIP CAPACITOR	[M]
L3505	ELJFCR68JF	CHIP INDUCTOR	[M]
L4211	G1C220KA0038	CHIP CAPACITOR	[M]
L5201	ELJEA100KF	CHIP INDUCTOR	[M]
L5202	ELJEA100KF	CHIP INDUCTOR	[M]
L5251	ELJEA100KF	CHIP INDUCTOR	[M]
L6001	RLQA101JT1-Y	AXIAL COIL	[M]
L6401	ELEPL221KA	INDUCTOR	[M]
L6501	G1C220KA0038	CHIP CAPACITOR	[M]
L6502	G1C220KA0038	CHIP CAPACITOR	[M]
T1021	ETS28AV125AC	TRANSFORMER	[M] ⚠
		OSCILLATORS	
X6001	EF0EC8004T4	CERAMIC OSCILLATOR	[M]
X6501	VSX1044	CRYSTAL OSCILLATOR	[M]
		DISPLAY TUBE	
FL4201	F1H0J1050018	1 6.3V	[M]
FL6251	F1H0J1050018	1 6.3V	[M]
FL6253	F1H0J1050018	1 6.3V	[M]
FL6254	F1H0J1050018	1 6.3V	[M]
FL6255	F1J1E1040022	CHIP FILTER	[M]
FL6401	A2BB00000099	FL DISPLAY	[M]
		FUSES	
F1001	VSF0248C16	FUSE	[M] ⚠
ZA1001	EYF52BC	FUSE HOLDER	[M]
ZA1002	EYF52BC	FUSE HOLDER	[M]
ZA1111	K9ZZ00000424	TERMINAL	[M]
ZA4401	K9ZZ00000424	TERMINAL	[M]
ZA4402	K9ZZ00000424	TERMINAL	[M]
ZA4403	K9ZZ00000424	TERMINAL	[M]
ZA6001	K9ZZ00000424	TERMINAL	[M]
		FUSE HOLDERS	
FC502	RWJ4406087KK	6P FLAT CABLE	[M]
FC503	REXX0312	2P WIRE	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
FC6401	RWJ5705122SS	5P WIRE (PNL PCB)	[M]
		FUSE PROTECTOR	
FP2001	K1MN50A00005	CONNECTOR	[M]
FP5201	K1MN30B00098	8CONNECTOR	[M]
FP5202	K1MN50B00010	CONNECTOR	[M]
PP3201	K1KA22A00046	22P CONNECTOR	[M]
PP4201	K1KA14A00135	14P CONNECTOR	[M]
PR1171	VSF0015A10T	IC PROTECTOR	[M] ⚠
		JACKS	
JK4401	K2YZ09000003	JK COMBINED	[M]
P1001	K2AB2B000002	AC INLET	[M]
		RESISTORS	
R1	ERJ3GEY0R00V	0 1/16W	[M]
R3	ERJ3GEY0R00V	0 1/16W	[M]
R1031	ERDS2FJ124T	120K 1/4W	[M]
R1032	ERDS2FJ124T	120K 1/4W	[M]
R1041	ERDS2TJ474T	470K 1/4W	[M]
R1042	ERDS2TJ474T	470K 1/4W	[M]
R1043	ERG2SJ680P	68 2W	[M] ⚠
R1051	ERDS2TJ750T	75 1/4W	[M]
R1052	ERDS2TJ2R2T	2.2 1/4W	[M]
R1053	ERDS2TJ331T	330 1/4W	[M]
R1054	ER0S2THF6800	68 1/4W	[M]
R1101	D0GB750JA019	75 1/16W	[M]
R1102	D1BB1201A028	12 1/16W	[M]
R1103	D1BB1201A028	12 1/16W	[M]
R1104	ERJ3GEYJ561V	560 1/16W	[M]
R1105	ERJ3GEYJ561V	560 1/16W	[M]
R1106	D0GB392JA002	3.9K 1/16W	[M]
R1107	ERJ3GEYJ472V	4.7K 1/16W	[M]
R1108	ERJ3GEYJ561V	560 1/16W	[M]
R1115	ERJ3GEYJ104V	100K 1/16W	[M]
R1116	ERJ3GEYJ102V	1K 1/16W	[M]
R1125	D0GB271JA002	270 1/16W	[M]
R1126	ERJ3GEYF182V	1.8K 1/16W	[M]
R1127	D1BB1201A028	12 1/16W	[M]
R1128	D0GB151JA008	150 1/16W	[M]
R1161	ERJ3GEYJ104V	100K 1/16W	[M]
R1165	ERD25FVJ100T	10 1/4W	[M]
R1166	ERJ3GEYJ472V	4.7K 1/16W	[M]
R1175	ERG1SJ100E	10 1W	[M] ⚠
R2001	ERJ3GEYJ102V	1K 1/16W	[M]
R2011	D0GB332JA002	3.3K 1/16W	[M]
R2012	D0GB563JA002	56K 1/16W	[M]
R2013	ERJ3GEY0R00V	0 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R2014	D0GB332JA002	3.3K 1/16W	[M]
R2015	ERJ3GEYJ223V	22K 1/16W	[M]
R2016	ERJ3GEY0R00V	0 1/16W	[M]
R2017	D0GB332JA002	3.3K 1/16W	[M]
R2018	ERJ3GEYJ223V	22K 1/16W	[M]
R2019	D0GB332JA002	3.3K 1/16W	[M]
R2020	ERJ3GEYJ223V	22K 1/16W	[M]
R2021	D0GB332JA002	3.3K 1/16W	[M]
R2022	ERJ3GEYJ123V	12K 1/16W	[M]
R2023	D0GB332JA002	3.3K 1/16W	[M]
R2024	ERJ3GEYJ123V	12K 1/16W	[M]
R2026	ERJ3GEYJ473V	47K 1/16W	[M]
R2028	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2029	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2030	ERJ3GEYJ103V	10K 1/16W	[M]
R2031	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2032	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2033	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2034	D0GB183JA002	18K 1/16W	[M]
R2035	ERJ3GEYJ822V	8.2K 1/16W	[M]
R2036	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2037	D0GB333JA002	33K 1/16W	[M]
R2038	ERJ3GEYJ102V	1K 1/16W	[M]
R2040	ERJ3GEY0R00V	0 1/16W	[M]
R2041	ERJ3GEYJ470V	47 1/16W	[M]
R2047	ERJ3GEYJ104V	100K 1/16W	[M]
R2048	ERJ3GEYJ104V	100K 1/16W	[M]
R2051	ERJ3GEYJ104V	100K 1/16W	[M]
R2061	ERJ3GEYJ330V	33 1/16W	[M]
R2502	ERJ3GEYJ153V	15K 1/16W	[M]
R2503	ERJ3GEYJ153V	15K 1/16W	[M]
R2504	ERJ3GEYJ823V	82K 1/16W	[M]
R2505	ERJ3GEYJ823V	82K 1/16W	[M]
R2507	D0GF6R8JA017	6.8 1/8W	[M]
R3001	D0GB220JA002	22 1/16W	[M]
R3002	ERJ3GEYJ472V	4.7K 1/16W	[M]
R3003	D0GB101JA002	100 1/16W	[M]
R3004	ERJ3GEYJ221V	220 1/16W	[M]
R3005	ERJ3GEYJ473V	47K 1/16W	[M]
R3007	ERJ3GEY0R00V	0 1/16W	[M]
R3071	ERJ3GEYJ103V	10K 1/16W	[M]
R3080	ERJ3RBD752V	7.5K 3W	[M] ⚠
R3082	ERJ3RBD162V	1.6K 3W	[M] ⚠
R3083	ERJ3RBD112V	1.1K 3W	[M] ⚠
R3084	ERJ3RBD752V	7.5K 3W	[M] ⚠
R3085	ERJ3RBD183V	18K 3W	[M] ⚠
R3086	ERJ3RBD432V	4.3K 3W	[M] ⚠
R3087	ERJ3RBD752V	7.5K 3W	[M] ⚠
R3088	ERJ3RBD752V	7.5K 3W	[M] ⚠
R3089	ERJ3RBD752V	7.5K 3W	[M] ⚠
R3090	ERJ3RBD272V	2.7K 3W	[M] ⚠

Ref. No.	Part No.	Part Name & Description	Remarks
R3101	ERJ3RED750V	75 3W	[M] ⚠
R3106	ERJ3RED750V	75 3W	[M] ⚠
R3111	ERJ3RED750V	75 3W	[M] ⚠
R3115	ERJ3RED750V	75 3W	[M] ⚠
R3521	ERJ3GEYJ222V	2.2K 1/16W	[M]
R3522	ERJ3GEYJ103V	10K 1/16W	[M]
R3531	D1BB75R0A012	75 1/16W	[M]
R3532	D1BB75R0A012	75 1/16W	[M]
R3533	D1BB75R0A012	75 1/16W	[M]
R3534	D1BB75R0A012	75 1/16W	[M]
R3535	D1BB75R0A012	75 1/16W	[M]
R3536	D1BB75R0A012	75 1/16W	[M]
R4001	ERJ3GEYJ104V	100K 1/16W	[M]
R4002	ERJ3GEYJ104V	100K 1/16W	[M]
R4004	ERJ3GEYJ104V	100K 1/16W	[M]
R4005	ERJ3GEY0R00V	0 1/16W	[M]
R4006	ERJ3GEY0R00V	0 1/16W	[M]
R4009	ERJ3GEYJ103V	10K 1/16W	[M]
R4010	ERJ3GEYJ103V	10K 1/16W	[M]
R4201	ERJ3GEY0R00V	0 1/16W	[M]
R4301	ERJ3GEYJ222V	2.2K 1/16W	[M]
R4302	ERJ3GEYJ223V	22K 1/16W	[M]
R4303	ERJ3GEYJ223V	22K 1/16W	[M]
R4304	ERJ3GEYJ223V	22K 1/16W	[M]
R4311	ERJ3GEYJ104V	100K 1/16W	[M]
R4312	ERJ3GEYD562V	5.6K 1/16W	[M]
R4313	ERJ3GEYD123V	12K 1/16W	[M]
R4321	ERJ3GEYJ104V	100K 1/16W	[M]
R4322	ERJ3GEYD562V	5.6K 1/16W	[M]
R4323	ERJ3GEYD123V	12K 1/16W	[M]
R4391	D0GB683JA002	68K 1/16W	[M]
R4392	D0GB683JA002	68K 1/16W	[M]
R4393	ERJ3GEYJ473V	47K 1/16W	[M]
R4395	D0GB333JA002	33K 1/16W	[M]
R4396	ERJ3GEYJ473V	47K 1/16W	[M]
R4401	ERJ3GEYJ222V	2.2K 1/16W	[M]
R4402	ERJ3GEYJ103V	10K 1/16W	[M]
R4403	D0GB332JA002	3.3K 1/16W	[M]
R4411	ERJ3GEYJ473V	47K 1/16W	[M]
R4412	D0GB821JA002	820 1/16W	[M]
R4413	D0GB821JA002	820 1/16W	[M]
R4414	ERJ3GEYJ221V	220 1/16W	[M]
R4421	ERJ3GEYJ473V	47K 1/16W	[M]
R4422	D0GB821JA002	820 1/16W	[M]
R4423	D0GB821JA002	820 1/16W	[M]
R4424	ERJ3GEYJ221V	220 1/16W	[M]
R4441	ERJ3GEYJ473V	47K 1/16W	[M]
R4442	D0GB821JA002	820 1/16W	[M]
R4443	D0GB821JA002	820 1/16W	[M]
R4444	ERJ3GEYJ221V	220 1/16W	[M]
R4445	D0GB821JA002	820 1/16W	[M]
R4446	D0GB821JA002	820 1/16W	[M]
R4447	ERJ3GEY0R00V	0 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R4485	D0GB332JA002	3.3K 1/16W	[M]
R4487	D0GB332JA002	3.3K 1/16W	[M]
R5203	D0GB563JA002	56K 1/16W	[M]
R5204	ERJ3GEYJ223V	22K 1/16W	[M]
R5211	ERJ3GEYJ2R2V	2.2 1/16W	[M]
R5212	ERJ12YJ270H	27 1/2W	[M] ⚠
R5213	ERJ3GEYJ473V	47K 1/16W	[M]
R5214	ERJ3GEYJ223V	22K 1/16W	[M]
R5215	ERJ3GEYJ2R2V	2.2 1/16W	[M]
R5216	ERJ12YJ270H	27 1/2W	[M] ⚠
R5217	ERJ3GEYJ473V	47K 1/16W	[M]
R5221	ERJ3GEYJ822V	8.2K 1/16W	[M]
R5222	ERJ3GEYJ822V	8.2K 1/16W	[M]
R5232	ERJ3RBD123V	12K 3W	[M] ⚠
R5235	D0GB105JA002	1M 1/16W	[M]
R5236	ERJ3GEY0R00V	0 1/16W	[M]
R5252	ERJ3GEYJ102V	1K 1/16W	[M]
R6011	ERJ3GEYJ473V	47K 1/16W	[M]
R6012	ERJ3GEYJ222V	2.2K 1/16W	[M]
R6021	ERJ3GEYJ103V	10K 1/16W	[M]
R6022	ERJ3GEYJ103V	10K 1/16W	[M]
R6023	ERJ3GEYJ103V	10K 1/16W	[M]
R6024	ERJ3GEY0R00V	0 1/16W	[M]
R6025	ERJ3GEYJ182V	1.8K 1/16W	[M]
R6026	ERJ3GEYJ682V	6.8K 1/16W	[M]
R6031	ERJ3GEYJ103V	10K 1/16W	[M]
R6032	ERJ3GEYJ103V	10K 1/16W	[M]
R6033	ERJ3GEYJ103V	10K 1/16W	[M]
R6061	ERJ3GEYJ681V	680 1/16W	[M]
R6062	ERJ3GEYJ681V	680 1/16W	[M]
R6063	ERJ3GEYJ681V	680 1/16W	[M]
R6065	ERJ3GEYJ681V	680 1/16W	[M]
R6066	ERJ3GEYJ681V	680 1/16W	[M]
R6067	ERJ3GEYJ681V	680 1/16W	[M]
R6071	ERJ3GEYJ103V	10K 1/16W	[M]
R6072	ERJ3GEYJ102V	1K 1/16W	[M]
R6073	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6074	ERJ3GEYJ223V	22K 1/16W	[M]
R6081	ERJ3GEYJ473V	47K 1/16W	[M]
R6082	ERJ3GEYJ473V	47K 1/16W	[M]
R6083	ERJ3GEYJ473V	47K 1/16W	[M]
R6084	ERJ3GEYJ473V	47K 1/16W	[M]
R6085	ERJ3GEYJ473V	47K 1/16W	[M]
R6086	ERJ3GEYJ473V	47K 1/16W	[M]
R6091	ERJ3GEYJ103V	10K 1/16W	[M]
R6201	ERJ3GEYJ103V	10K 1/16W	[M]
R6205	ERJ3GEYJ102V	1K 1/16W	[M]
R6206	ERJ3GEYJ103V	10K 1/16W	[M]
R6208	ERJ3GEYJ102V	1K 1/16W	[M]
R6301	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6303	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6401	ERJ3GEYJ102V	1K 1/16W	[M]
R6402	ERJ3GEYJ102V	1K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R6404	D0GB680JA019	68 1/16W	[M]
R6405	D0GB680JA019	68 1/16W	[M]
R6407	D0GB821JA002	820 1/16W	[M]
R6408	ERJ3GEYJ102V	1K 1/16W	[M]
R6409	D0GB122JA019	1.2K 1/16W	[M]
R6410	D0GB152JA002	1.5K 1/16W	[M]
R6411	ERJ3GEYJ182V	1.8K 1/16W	[M]
R6412	D0GB821JA002	820 1/16W	[M]
R6413	ERJ3GEYJ102V	1K 1/16W	[M]
R6414	D0GB821JA002	820 1/16W	[M]
R6415	ERJ3GEYJ102V	1K 1/16W	[M]
R6416	D0GB122JA019	1.2K 1/16W	[M]
R6417	D0GB152JA002	1.5K 1/16W	[M]
R6484	D0GB680JA019	68 1/16W	[M]
R6485	D0GB680JA019	68 1/16W	[M]
R6494	D0GB680JA019	68 1/16W	[M]
R6495	D0GB680JA019	68 1/16W	[M]
R6512	ERJ3RBD331V	330 3W	[M] ⚠
R6513	ERJ3GEYJ103V	10K 1/16W	[M]
R6514	ERJ3GEYJ470V	47 1/16W	[M]
R6515	D0GB100JA002	10 1/16W	[M]
K3001	ERJ3GEY0R00V	0 1/16W	[M]
K3011	ERJ3GEY0R00V	0 1/16W	[M]
K3012	ERJ3GEY0R00V	0 1/16W	[M]
K3013	ERJ3GEY0R00V	0 1/16W	[M]
K3101	ERJ3GEY0R00V	0 1/16W	[M]
K3106	ERJ3GEY0R00V	0 1/16W	[M]
K3111	ERJ3GEY0R00V	0 1/16W	[M]
K3112	ERJ3GEY0R00V	0 1/16W	[M]
K3116	ERJ3GEY0R00V	0 1/16W	[M]
K3117	ERJ3GEY0R00V	0 1/16W	[M]
K3201	ERJ3GEY0R00V	0 1/16W	[M]
K3202	ERJ3GEY0R00V	0 1/16W	[M]
K3501	ERJ3GEY0R00V	0 1/16W	[M]
K3503	ERJ3GEY0R00V	0 1/16W	[M]
K3505	ERJ3GEY0R00V	0 1/16W	[M]
K3507	ERJ3GEY0R00V	0 1/16W	[M]
K4011	ERJ3GEY0R00V	0 1/16W	[M]
K4012	ERJ3GEY0R00V	0 1/16W	[M]
K4022	ERJ3GEY0R00V	0 1/16W	[M]
K4024	ERJ3GEY0R00V	0 1/16W	[M]
K4026	ERJ3GEY0R00V	0 1/16W	[M]
K6091	ERJ3GEY0R00V	0 1/16W	[M]
K6092	ERJ3GEY0R00V	0 1/16W	[M]
K6093	ERJ3GEY0R00V	0 1/16W	[M]
K6201	ERJ3GEY0R00V	0 1/16W	[M]
K6251	ERJ6GEY0R00V	0 1/10W	[M]
K6301	ERJ3GEY0R00V	0 1/16W	[M]
RA2061	EXBV4V330JV	33 1/16W	[M]
RA2501	EXBV8V473JV	47K 1/16W	[M]
RA3008	EXBV4V103JV	10K 1/16W	[M]
RA3009	EXBV4V221JV	220 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
RA3011	EXBV4V473JV	47K 1/16W	[M]
RA4001	EXBV4V473JV	47K 1/16W	[M]
RA4002	EXBV8V104JV	100K 1/16W	[M]
RA4003	EXBV4VR000V	0 1/16W	[M]
RA4004	EXBV8VR000V	0 1/16W	[M]
RA4005	EXBV4VR000V	0 1/16W	[M]
RA4006	EXBV4VR000V	0 1/16W	[M]
RA5231	EXBV8V101JV	100 1/16W	[M]
RA6201	EXBV4V103JV	10K 1/16W	[M]
RA6202	EXBV4V103JV	10K 1/16W	[M]
RA6203	EXBV4V103JV	10K 1/16W	[M]
RA6204	EXBV4V103JV	10K 1/16W	[M]
RA6205	EXBV8V473JV	47K 1/16W	[M]
RA6206	EXBV4V103JV	10K 1/16W	[M]
RA6207	EXBV4V472JV	4.7K 1/16W	[M]
		CAPACITORS	
C1001	VCF0183M683	83 100V	[M]
C1002	VCF0183M683	83 100V	[M]
C1003	VCK0299E102	99 250V	[M]
C1005	VCK0299E222	99 250V	[M]
C1011	ECA2EHG470E	47 250V	[M]
C1012	ECA2EHG470E	47 250V	[M]
C1021	F1B2H4710002	470P 500V	[M]
C1031	F1B2H1820001	1800P 500V	[M]
C1041	ECQB1H223JF4	0.022 50V	[M]
C1051	ECQB1H104JF4	0.1 50V	[M]
C1052	ECQB1H683JF4	0.068 50V	[M]
C1053	ECQB1H104JF4	0.1 50V	[M]
C1101	ECQV1H104JL2	0.1 50V	[M]
C1102	ECQB1H223JF4	0.022 50V	[M]
C1111	VCEA1AJH102B	1000P 10V	[M]
C1112	VCEA1AJC102B	1000P 10V	[M]
C1115	ECUV1E104ZFV	0.1 25V	[M]
C1116	ECA1AM221B	220 10V	[M]
C1117	ECA0JM102B	1000P 6.3V	[M]
C1121	VCEA1AJH102B	1000P 10V	[M]
C1125	ECUV1E104ZFV	0.1 25V	[M]
C1126	ECJ1VB1H102K	1000P 50V	[M]
C1127	ECA0JM102B	1000P 6.3V	[M]
C1131	VCEA1EJH181B	180P 25V	[M]
C1141	VCEA1EJH181B	180P 25V	[M]
C1151	VCEA1EJH271B	270P 25V	[M]
C1153	VCEA1EJC221B	220P 25V	[M]
C1154	ECA1AM221B	220 10V	[M]
C1161	VCEA1HJH560B	56P 50V	[M]
C1165	ECJ1VB1H103K	0.01 50V	[M]
C1166	ECA1CM100B	10 16V	[M]
C1171	VCEA1AJH181B	180P 10V	[M]
C2001	F2G0J331A015	330P 6.3V	[M]
C2002	EEVHB0J101P	100P 6.3V	[M]
C2003	ECUVNC104ZFV	0.1 16V	[M]
C2004	ECUVNC104ZFV	0.1 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C2005	ECUVNC104ZFV	0.1 16V	[M]
C2006	ECUVNC104ZFV	0.1 16V	[M]
C2007	ECUVNC104ZFV	0.1 16V	[M]
C2008	ECUVNC104ZFV	0.1 16V	[M]
C2009	ECUVNC104ZFV	0.1 16V	[M]
C2010	ECUVNC104ZFV	0.1 16V	[M]
C2011	ECUVNC104ZFV	0.1 16V	[M]
C2015	ECUVNC104ZFV	0.1 16V	[M]
C2021	F1H1H822A022	8200P 50V	[M]
C2022	F1H1C393A089	0.039 16V	[M]
C2023	ECJ1VB1H681K	680P 50V	[M]
C2024	ECJ1VB1H681K	680P 50V	[M]
C2025	F1H1C473A088	0.047 16V	[M]
C2026	F1H1C473A088	0.047 16V	[M]
C2027	ECJ1VB1H332K	3300P 50V	[M]
C2028	ECUV1H152KBV	1500P 50V	[M]
C2029	ECUV1H152KBV	1500P 50V	[M]
C2030	ECJ1VB1H471K	470P 50V	[M]
C2031	ECJ1VB1H332K	3300P 50V	[M]
C2032	F1H1C473A088	0.047 16V	[M]
C2033	ECJ1VB1H332K	3300P 50V	[M]
C2034	ECUVNC104KBV	0.1 16V	[M]
C2035	F1H1C473A088	0.047 16V	[M]
C2036	ECJ1VB1H332K	3300P 50V	[M]
C2037	ECJ1VB1H102K	1000P 50V	[M]
C2038	F1H1A474A025	0.47 10V	[M]
C2039	ECJ1VB1H103K	0.01 50V	[M]
C2041	F1J1A2250007	22 10V	[M]
C2042	ECUVNC104KBV	0.1 16V	[M]
C2043	ECUVNC104KBV	0.1 16V	[M]
C2044	ECUVNC104ZFV	0.1 16V	[M]
C2045	ECUV1H101JCV	100P 50V	[M]
C2046	ECUV1C333KBV	0.033 16V	[M]
C2047	ECUVNC104KBV	0.1 16V	[M]
C2048	ECJ1VB1H332K	3300P 50V	[M]
C2051	ECJ1VB1H103K	0.01 50V	[M]
C2052	ECJ1VB1H102K	1000P 50V	[M]
C2061	RCST1AY106RE	10 10V	[M]
C2062	ECUVNC104ZFV	0.1 16V	[M]
C2063	ECUVNC104ZFV	0.1 16V	[M]
C2064	ECUVNC104ZFV	0.1 16V	[M]
C2501	EEVFC0J221P	220P 6.3V	[M]
C2502	ECEV1CA101WP	100 16V	[M]
C2503	ECEV1CA220WR	22 16V	[M]
C2504	ECUVNC104ZFV	0.1 16V	[M]
C2505	ECUVNC104ZFV	0.1 16V	[M]
C2506	ECUVNC104ZFV	0.1 16V	[M]
C2507	ECUVNC104ZFV	0.1 16V	[M]
C2508	ECUVNC104ZFV	0.1 16V	[M]
C2509	EEVFC1C100R	10P 16V	[M]
C2511	ECUVNC104ZFV	0.1 16V	[M]
C2512	ECUVNC104ZFV	0.1 16V	[M]
C2513	ECUVNC104ZFV	0.1 16V	[M]
C3001	F2G0J331A015	330P 6.3V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C3002	EEVFC0J221P	220P 6.3V	[M]
C3004	ECJ1VF1A105Z	1 10V	[M]
C3005	ECUVNC104ZFV	0.1 16V	[M]
C3006	ECUVNC104ZFV	0.1 16V	[M]
C3007	ECJ1VF1A105Z	1 10V	[M]
C3008	ECJ1VF1A105Z	1 10V	[M]
C3009	ECUVNC104ZFV	0.1 16V	[M]
C3010	ECUVNC104ZFV	0.1 16V	[M]
C3011	ECUVNC104ZFV	0.1 16V	[M]
C3012	ECJ1VF1A105Z	1 10V	[M]
C3013	ECJ1VF1A105Z	1 10V	[M]
C3014	ECUVNC104ZFV	0.1 16V	[M]
C3015	ECUVNC104ZFV	0.1 16V	[M]
C3016	ECJ1VF1A105Z	1 10V	[M]
C3017	ECUVNC104ZFV	0.1 16V	[M]
C3018	ECUVNC104ZFV	0.1 16V	[M]
C3019	ECJ1VF1A105Z	1 10V	[M]
C3020	ECJ1VF1A105Z	1 10V	[M]
C3021	ECUVNC104ZFV	0.1 16V	[M]
C3022	ECUVNC104ZFV	0.1 16V	[M]
C3023	ECUVNC104ZFV	0.1 16V	[M]
C3024	ECJ1VF1A105Z	1 10V	[M]
C3025	ECUVNC104ZFV	0.1 16V	[M]
C3026	ECJ1VF1A105Z	1 10V	[M]
C3027	ECUVNC104ZFV	0.1 16V	[M]
C3028	ECUVNC104ZFV	0.1 16V	[M]
C3029	ECUVNC104ZFV	0.1 16V	[M]
C3030	ECJ1VF1A105Z	1 10V	[M]
C3031	ECUVNC104ZFV	0.1 16V	[M]
C3032	ECUVNC104ZFV	0.1 16V	[M]
C3033	ECUVNC104ZFV	0.1 16V	[M]
C3034	ECUVNC104ZFV	0.1 16V	[M]
C3035	ECUVNC104ZFV	0.1 16V	[M]
C3036	ECJ1VC1H220J	22P 50V	[M]
C3041	ECUVNC104ZFV	0.1 16V	[M]
C3042	ECUVNC104ZFV	0.1 16V	[M]
C3043	ECUVNC104ZFV	0.1 16V	[M]
C3044	ECUVNC104ZFV	0.1 16V	[M]
C3045	ECUVNC104ZFV	0.1 16V	[M]
C3060	ECUVNC104ZFV	0.1 16V	[M]
C3061	ECUVNC104ZFV	0.1 16V	[M]
C3062	ECUVNC104ZFV	0.1 16V	[M]
C3063	ECUVNC104ZFV	0.1 16V	[M]
C3064	ECUVNC104ZFV	0.1 16V	[M]
C3065	ECJ1VF1A105Z	1 10V	[M]
C3066	ECUVNC104ZFV	0.1 16V	[M]
C3080	F2G0J331A015	330P 6.3V	[M]
C3081	ECUVNC104ZFV	0.1 16V	[M]
C3082	ECUVNC104ZFV	0.1 16V	[M]
C3083	F1H0J1050013	10 6.3V	[M]
C3084	F1H0J1050013	10 6.3V	[M]
C3085	F1H0J1050013	10 6.3V	[M]
C3086	F1H0J1050013	10 6.3V	[M]
C3087	ECUVNC104ZFV	0.1 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C3088	ECUVNC104ZFV	0.1 16V	[M]
C3089	ECUVNC104ZFV	0.1 16V	[M]
C3209	ECUVNC104ZFV	0.1 16V	[M]
C3210	ECUVNC104ZFV	0.1 16V	[M]
C3215	ECUVNC104ZFV	0.1 16V	[M]
C3501	ECA0JM221B	220 6.3V	[M]
C3502	F1H1H103A753	0.01 50V	[M]
C3503	F1H1H103A753	0.01 50V	[M]
C3504	ECJ1VB1H103K	0.01 50V	[M]
C3505	ECEA1CKS470I	47 16V	[M]
C3507	ECEA1CKS470I	47 16V	[M]
C3508	ECEA1CKS470I	47 16V	[M]
C3509	ECA0JM102B	1000P 6.3V	[M]
C3510	ECEA0JKA101B	100 6.3V	[M]
C3511	ECA0JM102B	1000P 6.3V	[M]
C3512	ECEA0JKA101B	100 6.3V	[M]
C3515	ECA0JM331B	330 6.3V	[M]
C3516	ECA0JM331B	330 6.3V	[M]
C3520	ECUV1H101JCV	100P 50V	[M]
C3531	ECJ1VB1H103K	0.01 50V	[M]
C3532	F1H1H103A753	0.01 50V	[M]
C3533	F1H1H103A753	0.01 50V	[M]
C4001	EEVHB0J330R	33P 6.3V	[M]
C4002	EEVHB0J330R	33P 6.3V	[M]
C4003	ECUVNC104ZFV	0.1 16V	[M]
C4004	ECUVNC104ZFV	0.1 16V	[M]
C4005	ECUVNC104ZFV	0.1 16V	[M]
C4006	ECUVNC104ZFV	0.1 16V	[M]
C4007	ECUVNC104ZFV	0.1 16V	[M]
C4008	ECUVNC104ZFV	0.1 16V	[M]
C4009	ECUVNC104ZFV	0.1 16V	[M]
C4010	ECUVNC104ZFV	0.1 16V	[M]
C4011	ECUVNC104ZFV	0.1 16V	[M]
C4012	ECUVNC104ZFV	0.1 16V	[M]
C4013	ECUVNC104ZFV	0.1 16V	[M]
C4014	ECUVNC104ZFV	0.1 16V	[M]
C4015	ECUVNC104ZFV	0.1 16V	[M]
C4021	F1H0J1050013	10 6.3V	[M]
C4022	F1H1H103A753	0.01 50V	[M]
C4023	F1H0J1050013	10 6.3V	[M]
C4031	ECUVNC104ZFV	0.1 16V	[M]
C4041	ECUVNC104ZFV	0.1 16V	[M]
C4051	ECUVNC104ZFV	0.1 16V	[M]
C4061	ECUVNC104ZFV	0.1 16V	[M]
C4201	F2G0J331A015	330 6.3V	[M]
C4202	RCST1AY106RE	10 10V	[M]
C4206	F2G0J330A015	33P 6.3V	[M]
C4207	ECUVNC104ZFV	0.1 16V	[M]
C4208	ECUVNC104ZFV	0.1 16V	[M]
C4209	ECUVNC104ZFV	0.1 16V	[M]
C4210	ECUVNC104ZFV	0.1 16V	[M]
C4218	ECUVNC104ZFV	0.1 16V	[M]
C4301	ECA0JM102B	1000P 6.3V	[M]
C4304	ECA1EM221B	220 25V	[M]

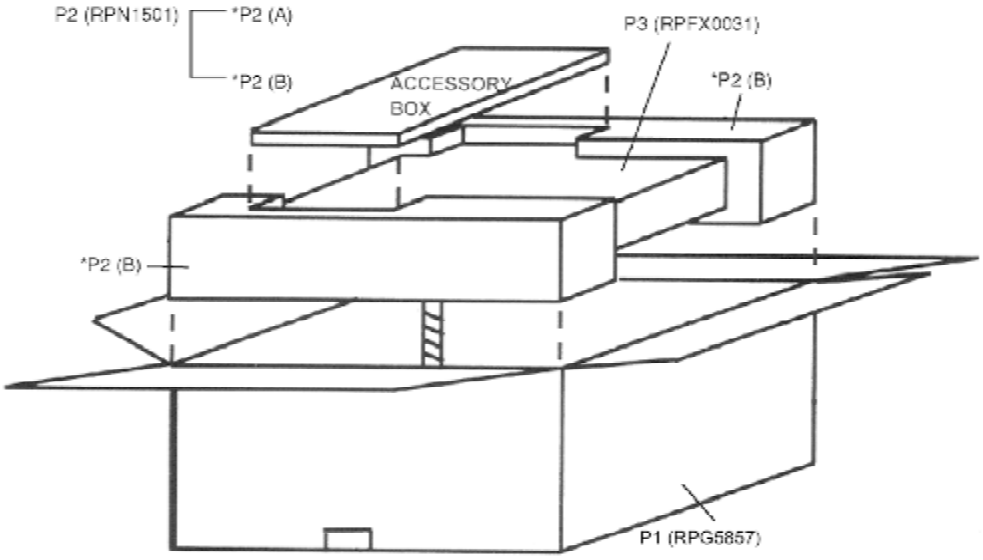
Ref. No.	Part No.	Part Name & Description	Remarks
C4305	ECA1EM221B	220 25V	[M]
C4308	ECUV1E104ZFV	0.1 25V	[M]
C4309	ECA1CAD470XI	47 16V	[M]
C4311	ECA1CAD470XI	47 16V	[M]
C4312	ECUV1H101JCV	100P 50V	[M]
C4313	ECUV1E104ZFV	0.1 25V	[M]
C4314	ECUV1E104ZFV	0.1 25V	[M]
C4321	ECA1CAD470XI	47 16V	[M]
C4322	ECUV1H101JCV	100P 50V	[M]
C4391	ECJ1VB1C223K	0.022 16V	[M]
C4392	ECUV1E104ZFV	0.1 25V	[M]
C4393	ECUV1E104ZFV	0.1 25V	[M]
C4395	ECJ1VB1C223K	0.022 16V	[M]
C4401	ECUV1E104ZFV	0.1 25V	[M]
C4405	ECUV1E104ZFV	0.1 25V	[M]
C4406	ECUV1E104ZFV	0.1 25V	[M]
C4407	ECUV1E104ZFV	0.1 25V	[M]
C4409	ECUV1E104ZFV	0.1 25V	[M]
C4411	ECA1CAD470XI	47 16V	[M]
C4412	ECJ1VC1H102J	1000P 50V	[M]
C4421	ECA1CAD470XI	47 16V	[M]
C4422	ECJ1VC1H102J	1000P 50V	[M]
C4441	ECA1ANK470XI	47 10V	[M]
C4442	ECJ1VC1H102J	1000P 50V	[M]
C4491	ECEA1HKA4R7B	4.7 50V	[M]
C4492	ECUV1E104ZFV	0.1 25V	[M]
C5201	EEVHB1C100R	10P 16V	[M]
C5202	EEVHB1C100R	10P 16V	[M]
C5203	ECUVNC104ZFV	0.1 16V	[M]
C5204	ECUVNC104ZFV	0.1 16V	[M]
C5205	ECJ1VC1H102J	1000P 50V	[M]
C5206	ECJ1VC1H102J	1000P 50V	[M]
C5207	ECJ1VC1H102J	1000P 50V	[M]
C5208	ECJ1VC1H102J	1000P 50V	[M]
C5211	EEVHB0J470R	47P 6.3V	[M]
C5215	EEVHB0J470R	47P 6.3V	[M]
C5221	ECUVNC104ZFV	0.1 16V	[M]
C5223	ECUVNC104ZFV	0.1 16V	[M]
C5224	ECUVNC104KBV	0.1 16V	[M]
C5225	ECUVNC104KBV	0.1 16V	[M]
C5231	ECUV1H101JCV	100P 50V	[M]
C5232	ECUVNC104ZFV	0.1 16V	[M]
C5233	ECUVNC104ZFV	0.1 16V	[M]
C5234	ECJ1VB1H222K	2200P 50V	[M]
C5235	F1H1H391A765	390P 50V	[M]
C5236	ECJ1VC1H102J	1000P 50V	[M]
C5237	ECUVNC104KBV	0.1 16V	[M]
C5238	F1H1A2240004	0.22 10V	[M]
C5239	ECUVNC104KBV	0.1 16V	[M]
C5240	F1H1H561A765	560P 50V	[M]
C5242	ECJ1VB1H472K	4700P 50V	[M]
C5251	ECUVNC104ZFV	0.1 16V	[M]
C5252	VCS1AS106R	10 10V	[M]
C5253	ERJ3GEYJ472V	4700P 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C6001	ECEA0JKA331Q	330 6.3V	[M]
C6002	ECUVNC104ZFV	0.1 16V	[M]
C6004	ECEA1HKA330B	33 50V	[M]
C6011	ECEA0JKA331Q	330 6.3V	[M]
C6012	ECUVNC104ZFV	0.1 16V	[M]
C6031	F1H1H103A753	0.01 50V	[M]
C6032	F1H1H103A753	0.01 50V	[M]
C6033	F1H1H103A753	0.01 50V	[M]
C6041	F1H1H331A022	330P 50V	[M]
C6042	F1H1H331A022	330P 50V	[M]
C6061	ECEA1CKS470I	47 16V	[M]
C6065	ECJ1VB1H103K	0.01 50V	[M]
C6201	EEVHB0J330R	33P 6.3V	[M]
C6202	ECUVNC104ZFV	0.1 16V	[M]
C6203	ECUVNC104ZFV	0.1 16V	[M]
C6204	ECUVNC104ZFV	0.1 16V	[M]
C6205	ECUVNC104ZFV	0.1 16V	[M]
C6206	ECUVNC104ZFV	0.1 16V	[M]
C6211	ECUV1H101JCV	100P 50V	[M]
C6221	ECUVNC104ZFV	0.1 16V	[M]
C6222	ECUVNC104ZFV	0.1 16V	[M]
C6251	ECUVNC104KBV	0.1 16V	[M]
C6253	RCST1AY106RE	10 10V	[M]
C6257	EEVHB0J101P	100P 6.3V	[M]
C6301	ECUVNC104ZFV	0.1 16V	[M]
C6302	ECUVNC104KBV	0.1 16V	[M]
C6303	ECUVNC104ZFV	0.1 16V	[M]
C6304	ECUVNC104ZFV	0.1 16V	[M]
C6305	ECUVNC104ZFV	0.1 16V	[M]
C6401	ECEA0JKA470B	47 6.3V	[M]
C6402	F1H1H103A753	0.01 50V	[M]
C6501	EEVHB0J330R	33P 6.3V	[M]
C6502	EEVHB0J330R	33P 6.3V	[M]
C6503	ECUVNC104ZFV	0.1 16V	[M]
C6504	ECUVNC104ZFV	0.1 16V	[M]
C6505	ECUVNC104ZFV	0.1 16V	[M]
C6511	ECJ1VC1H150J	15P 50V	[M]
C6512	ECJ1VC1H150J	15P 50V	[M]

19.4. Packing Materials & Accessories Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS	
P1	RPG5857	PACKING CASE	[M]
P2	RPN1501	POLYFOAM	[M]
P3	RPFX0031	MIRAMAT BAG	[M]
		ACCESSORIES	
A1	N2QAJB000051	REMOTE CONTROL	[M]
A1-1	RKK-HTR0283	R/C BATTERY COVER	[M]
A2	RJA0065-A	AC CORD	[M] ⚠
A3	RQT6297-P	O/I BOOK (ENG)	[M]
A4	K2KA6CA00001	A/V CORD	[M]

19.5. Packaging



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